

The roundness and
brilliancy of the print on

ARTURA

tells the story of Artura
quality.

*The paper without a
disappointment.*



CANADIAN KODAK CO.,
LIMITED,
TORONTO, CANADA.

All Dealers'.



FROM 1917 KODAK ADVERTISING CONTEST

*By George J. Bollo
New York City*



STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

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No. 11

DO YOUR BIT TOWARDS WINNING THIS WAR

You may have bought bonds, cut down on fuel and food, encouraged some of your help to enlist in the Army or Navy, contributed to the Red Cross and the Y. M. C. A.—you may even have sons, relatives and friends who are doing their all towards winning this war, and still you may be lacking in the one vital thing that, more than all else, may be the means of bringing victory to our fighting forces.

We will win the war, but the sooner we know what is required and the sooner we bend every effort to furnish the vital needs of our armies, just that soon can we say we are doing our bit. The longer the delay the greater will be the cost, not alone in dollars and cents, but in life and happiness.

With billions in money our Government is unable to buy one

of the vital necessities of modern warfare. With millions of men, ample food, clothing, guns and munitions, we are unable to equip one of the most important divisions of our army with the necessary material to intelligently and efficiently direct our guns and human fighting forces.

The army must have lenses that cannot at the present time be made; that cannot be bought in the open market—slacker lenses that are in the front boards of photographers' cameras and must come out in the open and do their part towards hastening the winning of the war, as they surely will.

If the war is not actually won in the air, our forces can at least be most effectively directed from the air, and our losses will often be determined by the efficiency of this important branch of the service.

Many people do not know that the most important work of the Aerial Forces of our

Allies is the securing of photographs of enemy lines, batteries, troop movements, etc., from which maps are made or altered daily, and by which information, weak spots are found, advances conducted or troops most advantageously stationed to repulse an enemy attack.

Aerial battles, as a rule, are the result of enemy interference with machines manned by photographers and cameras sent up daily to obtain such information. Each photographic outfit has its convoy of fast battle planes to fight off attacking machines, and also to prevent the enemy from securing photographic information.

The camera lens is truly the eye of the army, and our fleet of air planes must have this equipment. The Signal Corps of our army asks photographers to enlist their lenses for army service—to be fitted to cameras for the fleet of observation airplanes now being built. The need is immediate and of greatest importance.

England had to meet this same difficulty in the earlier stages of the war in the same way. She is now making lenses better than those formerly imported, but no faster than needed for her own use. Our Bureau of Standards is perfecting glass from which we will be able to make lenses of new and improved types, but not in time to equip airplanes already built or those soon to be ready for service.

The lenses most needed and which the Government is willing to buy are in your hands, and you should show no reluctance in selling them for such a cause—the protection of the lives of our loyal soldiers and the success of our armies in France.

Lenses are being made and thousands are for sale in Stock Houses throughout the country that do not meet the Government's special requirements but which you can use without being handicapped. Sell your lens to the Government and buy one of these.

The Signal Corps of the Army through its Photographic Division has been endeavoring, by various forms of publicity, to secure the necessary lenses for its work, but those most vitally needed are still in the possession of photographers throughout the country.

Sell your lens to the Government *now*, and you will render it a great service. Don't wait for the other fellow—don't fear the loss of a job of work—don't measure your patriotism in dollars and cents, and don't stop when you have done *your* part. Call a meeting of the photographers in your town and urge them all to enlist their lenses as well.

This plan has been adopted in some cities with wonderful results, and the Signal Corps will be glad to render all assistance



FROM 1917 KODAK ADVERTISING CONTEST

*By Wm. Shewell Ellis
Philadelphia, Pa.*



possible in arranging such meetings. You are requested to give this help.

Take the initiative and be classed as one of the active workers in the movement to bring about the united and unselfish support of our fighting forces by every true American.

All makes of foreign lenses of a working aperture of *F.3.5* and *F.4.5*, with focal lengths of $8\frac{1}{4}$ to 24 inches, are needed. The following are some of the makes wanted: Carl Zeiss Tessars, Bausch & Lomb Zeiss Tessars, Voigtlander Heliar, Euryplan, Cooke, Goerz, Moia, Bush, Ross, Ross-Zeiss, Krauss, Krauss-Zeiss, Steinheil-Isostigmatar.

You are requested to immediately notify the Photographic Division of the Signal Corps, U. S. A., 825 Mills Building Annex, Washington, D. C., of lenses of the description above which you are willing to sell and the price asked.

Enlist your lens in the U. S. Army and, by so doing, increase its efficiency in locating enemy guns and enabling our artillery to put them out of action.

That it is your duty to lend this assistance should be enough to insure your prompt and unselfish action.



Make the print on
ARTURA

EASTMAN SCHOOL OF PROFESSIONAL PHOTOGRAPHY TEMPORARILY DISCONTINUED

During the past year the Eastman School has met with the greatest success of any year since its inception, and we are justly proud of its record. It is not our desire to curtail a plan of service to the professional photographer, of which we believe the Eastman School has become a very important part.

We must sooner or later, however, adapt ourselves to conditions made necessary by the preference given to shipments of food, supplies and munitions—conditions which the School had already begun to feel in its transportation problem.

Transportation has been one of the greatest problems of our Government, and transportation in all its forms must be conserved in every way possible. The School requires express transportation facilities for ten or twelve thousand pounds of apparatus, and as it has in the past been doing its "bit" to help the photographer, we feel that it must now do its "bit" to help the cause of the Nation, which is your cause and ours.

After we win the war, the work of the School will be resumed. In the meantime, we ask you to put your problems up to our demonstrators, who are



FROM 1917 KODAK ADVERTISING CONTEST

*By Chas. Lueddecke
Philadelphia, Pa.*



thoroughly competent and always willing to be of service to you.

Give the demonstrator the opportunity to help you, and his fund of experience will prove of real value—will get you out of many a photographic difficulty.



THE FLASH LIGHT IN PORTRAITURE

The greater appreciation and increasing use of flashpowder shows that the photographer is quick to realize the possibilities of the use of what we may call home-made sunlight. A flashlight is practically an instantaneous burst of bright sunshine. It has one great advantage over sunlight in that it can be produced in places where sunlight never penetrates. We can make our sunlight wherever and whenever we wish.

It is to be expected that the sudden production of a flash of light as brilliant as sunshine, in comparative darkness, must have a very considerable effect upon the eye—an organ which is as sensitive as it is wonderful. While the eye can accommodate itself readily to differences in illumination as much as a million to one, which is equivalent to bright sunlight out-of-doors and a dark night out-of-doors, the changes are usually made more or less gradually. When a change in illumination of anything like this

range is made suddenly, some unusual effect must be produced upon the eye.

To find what these effects are, some very interesting experimental work has been carried out at the Research Laboratory of the Eastman Kodak Company. It is well known that the eye seeks to protect itself against sudden changes of brightness. One way is by the involuntary contraction of the pupil of the eye and a further protection is the closing of the eyelid by a wink. These are known as reflex actions and we have no control over them. A study of this reflex action of the eye must be of considerable interest to the portrait photographer who does any flashlight work.

It has been found by careful experiments that the reflex action of the eye can be photographed and actual measurements made of these movements. This is done by the aid of a motion-picture camera, which can be speeded up so that pictures can be made at the rate of thirty-two per second.

Focusing the eye in daylight the motion-picture camera is started and the flash set off fairly close to the subject. The results are shown in Figure 1. The pictures were made at the rate of thirty-two per second, the actual exposures, however, being only $\frac{1}{64}$ th of a second each as the shutter opening is closed for $\frac{1}{64}$ th



Fig. 1

while a new portion of the film moves into place for the next exposure. In the first three pictures we see the eye in its normal state, the flash was then fired and its closeness to the subject is shown by the over-exposure of the fourth and fifth pictures which get the full benefit of the flash which lasted for the time of two exposures and two intervals and was therefore equal to one-sixteenth of a second. By this method there is, of course, a possibility of the introduction of a slight error, in case the flash commences while the shutter is closed, though this error may be reduced to a minimum by making the shutter blade opening as large as possible, thus reducing the pull-down interval.

As before stated a sudden change in illumination produces some unusual effects on the eyes and we have pictures of what actually happens in Figure 1. The reflex action, by means of which the eye seeks to protect itself, is shown in the sixth, seventh, eighth and ninth pictures, where we see the eyes gradually close and open in a wink. In the tenth picture they are practically normal again, though it will be one or two minutes before they are absolutely normal as in the first three pictures.

It will be noticed that the reflex action or wink did not begin until the third exposure after the flash had been fired, so that the subject faced the light for a little more than two exposures and the time intervals between, a total of about a twelfth of a second after the flash was fired. The wink lasted for one-eighth of a second, or a period of time during which the camera recorded four exposures. The time for this reflex action to occur varies slightly with different people, but in no case was it found to be less than one-twelfth of a second. There is just a possibility that the natural wink of the eye may occur simul-



Fig. 2

taneously with the flash, but it would be impossible to foresee or prevent it. Such a coincidence however would be extremely rare.

Since the wink or reflex action does not occur until one-twelfth of a second after the flash has commenced, a flash powder that has an effective speed not slower than one-twelfth is sufficiently rapid for portraiture.

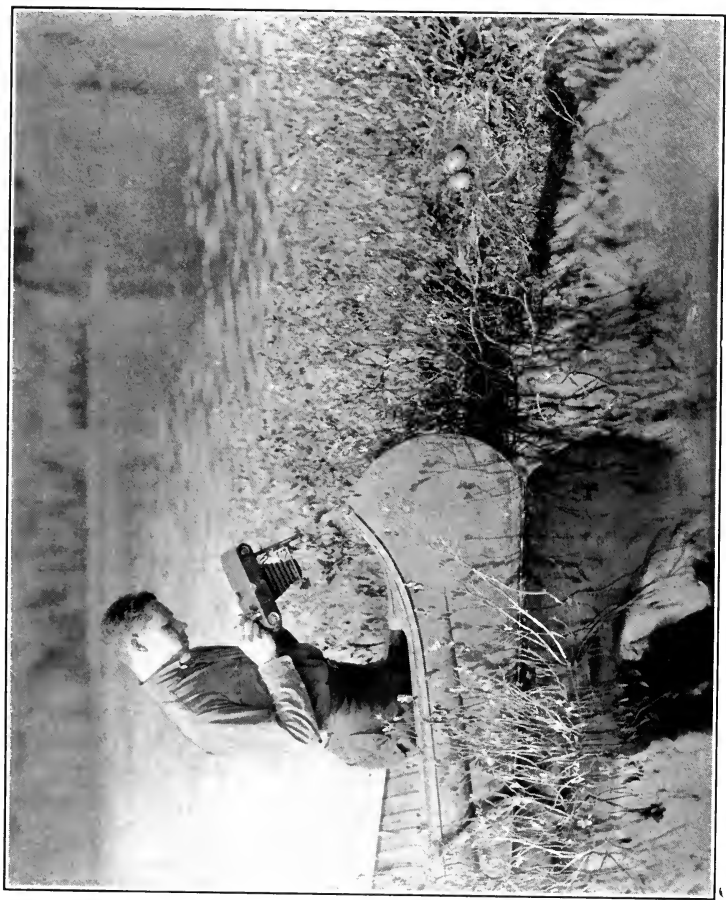
An objectionable effect seen in some flashlight work but not actually produced by the flash itself is what is known as the flash-light stare, so well reproduced in Figure 2. This is produced by another of nature's efforts to adapt herself to different condi-



Fig. 3

tions. Just as when the eye is subjected to a sudden increase in brightness it will close the iris and the eyelid to keep out the light, it will work the other way in darkness or when the illumination is reduced below normal. In the effort to see better at a lower level of illumination the iris becomes dilated and the eyelids and eyebrows raised.

Figure 3 was made almost immediately after Figure 2, the eyes being brought back to normal by pointing the light from an electric lamp at the face, and producing an illumination approximating weak daylight, which had the effect of contracting the dilated pupils and drawing down



FROM 1917 KODAK ADVERTISING CONTEST

*By H. V. Roberts
Utica, N. Y.*



the eyelids to their normal position, usually seen in ordinary daylight. A good light must be maintained until the moment of the flashlight exposure to prevent this stare and the eye must not be focused into any dark shadow. Care must also be taken that the shutter is not opened for any appreciable time before or after the flash in order to avoid a double image, made possible by the auxiliary light should there be any movement of the sitter or camera. Such a double image may be entirely prevented by the use of an arrangement which opens the camera shutter and sets off the flash at the same time.

Another very interesting piece of work which has been carried out at the Laboratory is that of measuring the speeds of different flashlight compounds. There are several methods of doing this. One of them is to touch off a charge of powder behind a sheet of opal glass covering a circular opening in an opaque screen, in front of which a metal disk, with a radial slit about one-fifth of an inch wide is revolved at a given speed. The disk is photographed at the moment the flash powder is fired and when the plate is developed the angle of the sector formed can be measured and the speed of the flash easily calculated.

The shutter testing apparatus at the Laboratory will make very accurate measurements, but is

not so convenient as the motion-picture camera method which is extremely simple. The camera is set up in a comparatively dark room. It is operated by a motor and made to run at a constant speed, taking thirty-two pictures per second. The powder to be measured is ignited behind an opal glass screen and its intensity and duration recorded as faithfully as the smile of a movie favorite.

Figures 5 and 6 show the negatives obtained by such exposures. Figure 5 being the record of a fast burning powder, and Figure 6 that of a slow burning powder. If we measure the density—the amount of the silver deposit on each square and plot it off against time, we get the time-intensity curve shown in Figure 4, the curve with the short base representing the quick flash and the longer based curve the slower flash.

Each square or picture represents a time interval of one thirty-second part of a second, so that the total duration of the flash may be taken as four thirty-second parts of a second, and nine thirty-seconds of a second respectively. In Figure 6 we have the slow flash showing nine exposures, indicating that the flash lasted nine thirty-seconds of a second. From Figure 5 we see that the flash had a duration of four pictures or four thirty-seconds of a second. A reference to

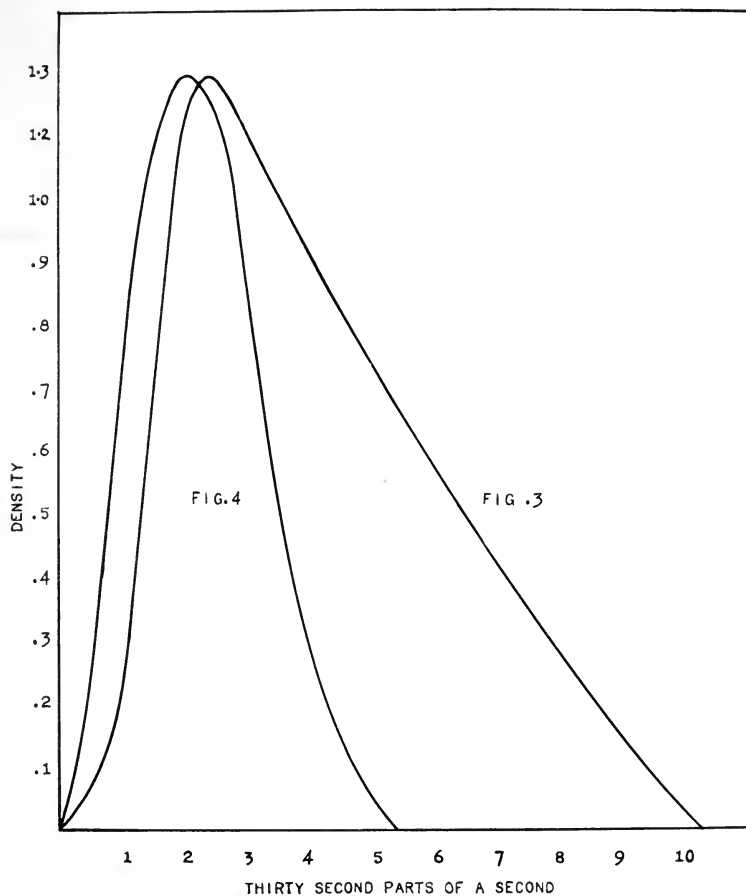


Fig. 4

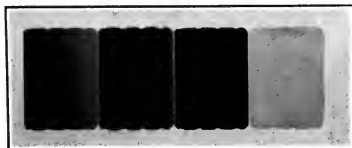


Fig. 5

Fig. 6



the curves in Figure 4 shows that both powders reached their highest intensity almost immediately and during the second exposure. Owing to the limitations of the half-tone reproductions we cannot distinguish the depth of intensity in Figures 5 and 6, but they are clearly shown in the plotted curves in Figure 4. The last four or five pictures in Figure 6 show a rapid and marked falling off in light intensity. The greatest density—highest illumination—is reached in both cases in from two to three thirty-second parts of a second.

The effective speed of most flash powders is usually faster than one-twelfth of a second, though the speed may drop with age, especially if the powder becomes damp. In this connection, the meaning of the word "effective" will be clear on reference to Figure 6. It is seen that the last three or four images are very weak, compared with the second or third, that is to say, very little impression is made on the film during the later stages of the flash.

Working with a strong auxiliary light while focusing or combining flashlight with daylight and using a fast flash powder, both the stare before and the wink after the flash can be eliminated, and results can be produced that are quite as good as those made by daylight alone or any other illumination.

ADVERTISING CONTEST RESULTS

Three thousand dollars has been distributed in fourteen cash prizes to winners of the 1917 Kodak Advertising Competition.

It was a big competition and the usual number of good pictures were entered, those which seemed to the judges to be most suitable for Kodak advertising being awarded the prizes.

The judges were fair-minded and impartial and the prize money was more evenly divided than in previous competitions, owing to the greater number of prizes.

The appeal of the Kodak is so broad that just as no one idea can adequately cover the Kodak advertising field, no one picture or class of pictures can illustrate the many pleasurable phases of amateur photography. We are pleased with the result of the contest and the variety of material it has furnished us for another year's advertising.

In much of our advertising we depend almost entirely upon the selling argument the picture presents, and there must be no question about the picture getting the idea across.

The more forceful we can make the selling argument the picture conveys in our Kodak advertising, the greater will be its influence on other advertisers.

Look through the pages of the



FROM 1917 KODAK ADVERTISING CONTEST

*By Chas. Luedecke
Philadelphia, Pa.*



big American magazines, and the steadily increasing use of photographs that tell of the uses of the articles advertised, is quickly seen.

A good picture presents a selling argument more forcefully than type, but it is difficult for many advertisers to secure the right sort of pictures. Our contests have taught the photographer something of "selling appeal" requirements, and we trust has given him a clearer idea of the sort of human-interest pictures that make people want the articles the pictures advertise.

When we win this war, honest American-made goods must retain their prestige and honest American-made advertising will be drawn upon as never before. Just here there will be a great field for the photographer who has made a study of advertising requirements, who has ideas of his own or can take another's ideas and express them in pictures that will instantly attract the buying public.

Such pictures are required not only for general magazine advertising but for catalogues, trade magazines, booklets, mailing cards and every form of advertising that reaches the retailer and consumer. If you have some talent for such work, it is worth developing, for we are only one of hundreds of manufacturers who believe in the selling force of pictures.

The judges of the 1917 contest were Dudley Hoyt, New York City; Frank Scott Clark, Detroit, Mich.; A. C. G. Hammesfahr, Vice-Pres. and Gen. Mgr., P. F. Collier & Son, Inc., New York City; W. R. Hine, Vice-Pres. and Gen. Mgr., Frank Seaman, Inc., New York City.

The awards were as follows:

First—George J. Botto, 16 West 45th St., New York City	\$750.00
Second—William Shewell Ellis, 1612 Chestnut St., Philadelphia, Pa.	500.00
Third—W. B. Stage, 743 Fifth Ave., New York City	350.00
Fourth—William Berger, Jr., 10 W. Chelton Ave., Germantown, Pa.	250.00
Fifth—Edwin G. Dunning, 25 E. 65th St., New York City	200.00
Sixth—Chas. Luedecke, Jr., 20 S. 52nd St., Philadelphia, Pa.	150.00
Seventh—Fashion Camera Studios, 243 West 39th St., New York City	100.00
Eighth—William Shewell Ellis, Philadelphia, Pa.	100.00
Ninth—Hobart V. Roberts, 1602 Sunset Ave., Utica, N. Y.	100.00
Tenth—Edwin G. Dunning, New York City	100.00
Eleventh—Hobart V. Roberts, Utica, N. Y.	100.00
Twelfth—Holmes I. Mettee, 2229 Mondawmin Ave., Baltimore, Md.	100.00
Thirteenth—Chas. Luedecke, Jr., Philadelphia, Pa.	100.00
Fourteenth—Mrs. Arthur Bazille, 605 Carroll St., St. Paul, Minn.	100.00



FROM 1917 KODAK ADVERTISING CONTEST

By H. V. Roberts
Utica, N. Y.



COLD DEVELOPER

A demonstrator dropped into a studio recently and found the photographer intensifying the entire lot of negatives made and developed the day before. Naturally, the cause of weak negatives interested the demonstrator, for it is his business to keep the materials he demonstrates working up to standard.

On asking the cause of the trouble, the photographer remarked that his developer had not been working as it should and he felt sure the developing agent was not up to standard or the plates were off quality. "I have a few plates to develop this morning," he said, "and you might see them go through."

The demonstrator halted operations long enough to get his thermometer into action, for the dark room was quite cold. As he supposed, the temperature of the developer when ready for use was slightly over 50° when it should have been 65° . Some hot water was placed in a large tray and the developing tray placed in this until the temperature reading was slightly above 65° . By the time the plates were developed the solution had dropped a few points and development was perfectly satisfactory.

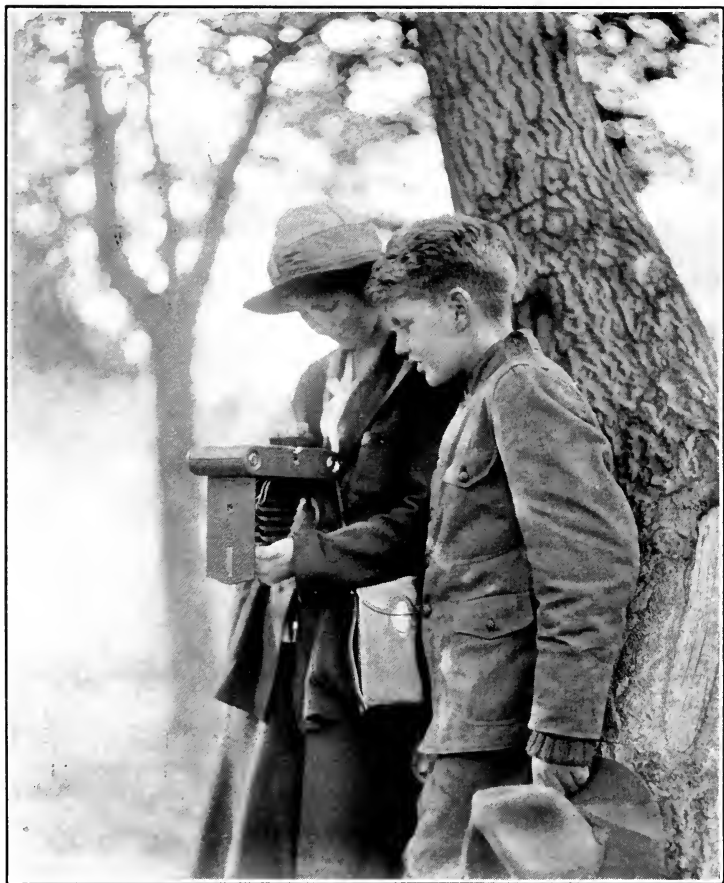
The tips of your fingers will never take the place of a thermometer. If your hands are very cold, water at 55° will feel 65° .

The wrist is more sensitive than the finger tips, but, why guess when thermometers are so plentiful?

In the case mentioned an unexpected cold snap had so materially reduced the temperature of the water supply that the usual winter precautions had been forgotten.

The results of developing at low temperatures are very likely to be encountered in tank development. If small plate tanks are used the developer may be made up and used without the fingers touching the solution or a thermometer being used. The air-tight tank acts, in a measure, as a thermos bottle and holds the temperature fairly even for the time of development. This is an advantage if the solution is at the proper temperature when the plates are placed in the tank, but a thermometer should be used to make sure that the developer is not below 65° , the normal developing temperature.

With large open tanks, maintaining the proper temperature is a more difficult problem. Photographers, as a rule, appreciate the importance of temperature, and in many cases where large tanks are used a water jacket has been built around the tank. This permits one to fill the space between the jacket and the tank with hot water and by so doing, to keep the developer at the normal temperature.



FROM 1917 KODAK ADVERTISING CONTEST

*By Wm. Berger
Germantown, Pa.*



If large tanks are not provided with water jackets, a glazed fire brick or a stone may be heated and placed in the tank, or a jug of hot water suspended in the solution until the temperature has been raised to the desired point.

Negatives that are slightly too thin can be improved by drying quickly in a warm room with an electric fan, but it is best to secure the proper density by sufficient development in a solution of the correct temperature. As the rate of drying does have an effect upon density the greatest uniformity is secured by drying all negatives alike with an electric fan in a warm room.



PAPERS DISCONTINUED

We are discontinuing the manufacture of photographic papers included in the following list as other grades in all cases cover the work for which these papers were intended:

Azo Grade A Soft, Single Weight.
Azo Grade D Soft, Single Weight.
Azo Grade D Soft, Double Weight.
Azo Grade B Hard, Single Weight.
Artura Chloride Medium Rough.
Artura Chloride Heavy Smooth.
Bromide Platino A.
Platino C.

The users of Azo Grade A Soft and D Soft Single Weight and D Soft Double Weight will find that corresponding brands of Hard can readily be substituted.

The demand for Artura Chloride Medium Rough is not sufficient to continue its manufacture. As a substitute for Artura Chloride Heavy Smooth, Iris Grade C may be used, as the surface is practically the same.

As a substitute for Platino A Bromide, Matte Enamel can be used and for Platino C, Standard C is a satisfactory substitute.



The idea that additional safety is secured in a dark-room by covering the walls and ceiling with a non-actinic color is an old one and one that is very persistent. A little thought should, however, be enough to show any one that the color of the walls makes no difference whatever if the light is safe.

Therefore, if a reliable light is available we may just as well have the walls and ceilings as white as possible and reap the benefit of as much light as possible reflected about the room and in the corners.

Assuming the light not to be quite safe, the colored walls may have an advantage, but in fact it is more of a theoretical than a practical one, for the light is so enfeebled by reflections that it is likely to be rendered comparatively safe even if the reflecting surface is white.





FROM 1917 KODAK ADVERTISING CONTEST

*By E. G. Dunning
New York City*



HOW VIEW-POINT LENDS DIGNITY

The point of view has such an important bearing on the general appearance of portraits that it should be given as much attention as expression or posing. The camera is often too high for no other reason than the convenience afforded to the photographer.

The effect produced when the camera is too high gives one the idea that the sitter is short and squatty. The camera on a level with the sitter, or even lower, gives an idea of dignity and stateliness that is more characteristic of the bearing of a soldier and especially an officer.

Many photographers do not give the point of view proper thought and then wonder why it is that regardless of the way the figure is spaced in the print, it seems inclined to drop out of the bottom.

The same applies to standing figures as to a sitting position, though the fault is not quite so bad. All that is needed to see the effect in exaggerated form is to observe a speaker from a front seat below the platform and then from the balcony.

It isn't necessary to place your sitter on a platform when your camera can be lowered, but it is better to have a platform for the sitter and secure good results than not to lower your camera when you should.

If you don't believe point of view has an important bearing on the general effectiveness of the portrait, try it out for yourself and see.

The man or woman who sits for a portrait will not tell you how it must be made—will not suggest the point of view and will not know why the picture does not please if the point of view is bad.

The painter and photographer both choose their point of view and the difference in choice accounts for very much of the difference in the portraits.

In most painters' studios the subject is placed upon a platform and the artist sits at his easel a foot or two lower. The subject is not only a foot or more higher but the artist's eye is considerably below the height of the ordinary studio camera.

The low point of view undoubtedly gives height and dignity and should be used by the photographer to the best possible advantage without over-doing. It is not *always* the best point of view, but it could be used more often in portraits of soldiers and in almost every case where the sitter is rather short.

Your customer will not know why such pictures are more pleasing to them, but they will come to you to have them made, and that is the all-important thing.



Make the soldiers
happy with
pictures of home
folks

*Cloudy or bright days
are equally good for
sittings. Make the ap-
pointment to-day.*



THE PYRO STUDIO

Line cut No. 248. Price, 50 cents.

THE ONLY CONDITION

We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first*. C. K. CO., LTD.

ENLIST YOUR LENS IN THE U. S. ARMY

The people are asked to help the Signal Corps of the Army get lenses enough for cameras for the fleet of observation airplanes now being built. The need is immediate and of great importance. The lens is the eye of the Army.

The situation is that, American manufacturers are not yet in a position to meet the sudden demand for special lenses for aerial service. Possessors of the required types are, therefore, urged to do their bit by enlisting their lenses in the service of the Army. They are asked to immediately notify the Photographic Division of the Signal Corps, U. S. A., Mills Building Annex, Washington, D. C., of lenses of the following descriptions which they are willing to sell, stating price asked:

Tessar Anastigmat Lenses made by Carl Zeiss, Jena, of a working aperture of F. 3.5 or F. 4.5, from $8\frac{1}{4}$ to 20 inch focal length.

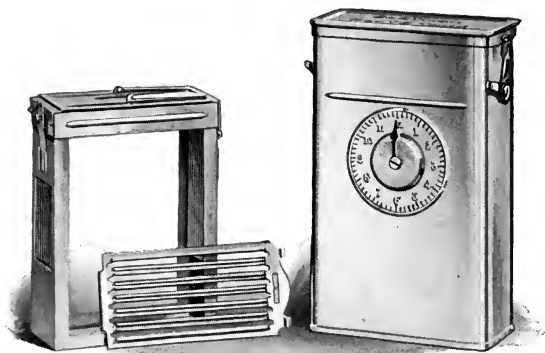
Bausch & Lomb Zeiss Tessars, F. 4.5, from $8\frac{1}{2}$ to 20 inch focal length.

Voigtlander Heliar Anastigmat Lenses, F. 4.5, $8\frac{1}{4}$ to 24 inch focal length.

Practically all of the lenses of these and other foreign makes of anastigmats in America will be required, but the $8\frac{1}{4}$ inch lenses are most urgently needed.

8, 9, 12 and 14 inch condensers are wanted; also a number of Bausch & Lomb Zeiss Protars VII A No. 13, preferably set in Volute shutters.

(It is requested that the press and individuals giving publicity to the above give the specifications of the lenses desired accurately. This will avoid the labor and delay of unnecessary correspondence with people offering lenses that are unsuitable.)



Develop in the

Eastman Plate Tank

A better and more uniform quality of negatives is the result of a more evenly maintained temperature of the developer—the negatives are cleaner because the air-tight and light-tight tank prevents fog and obviates the necessity for handling. The time in the dark-room is the actual time necessary for loading and unloading the tank.

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

Two methods of dark room illumination that you can be sure are safe.

Kodak Safelight Lamp



By employing reflected light which shines through a Wratten Safelight, the greatest volume of illumination that can be used with safety is secured. You have a safe light *and yet there's more of it.*

Interior of lamp is enameled a brilliant white to intensify light reflection.

Kodak Safelight Lamp supplied with safelight and four feet of electric light cord with plug . . \$4.00



Brownie Safelight Lamp

This lamp is admirably adapted to plate or film changing. Screwed into the ordinary electric light socket, in the wall or on a cord, the Brownie Safelight Lamp instantly provides a means of safe illumination. Both safelights, the circular one at the end and the rectangular one at the side, are removable.

Brownie Safelight Lamp \$1.25

Canadian Kodak Co., Limited,

All Dealers'.

Toronto, Canada.

WANTED

DISCARDED NEGATIVES

We purchase discarded negatives of standard sizes from $4\frac{3}{4}$ x $6\frac{1}{2}$ to 20 x 24, providing same are in good condition and are carefully packed in accordance with our instructions.

We will pay all the freight on shipments of 100 lbs. or more, except from localities where the freight rate exceeds \$1.00 per 100 lbs., in which case the shipper will be required to pay the excess.

Before making any shipment please secure these instructions, prices and further particulars, which will be furnished on application.

Canadian Kodak Co., Limited,

Toronto, Canada.

Department S.

Strength and purity maintained at a uniform standard is the result of constant, careful testing of the chemicals bearing this seal. They are right for your use.



*Specify C. K. Co. Tested and
be sure of results.*

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

How do you care for portraits in *your* home?
Sell yourself a portrait album and you will have
no trouble in selling your customers.



EASTMAN PORTRAIT ALBUMS

in the homes of your patrons will increase your business by stimulating the interchange of photographs. An album that will hold forty-eight photographs will create a demand for forty-eight portraits to fill it.

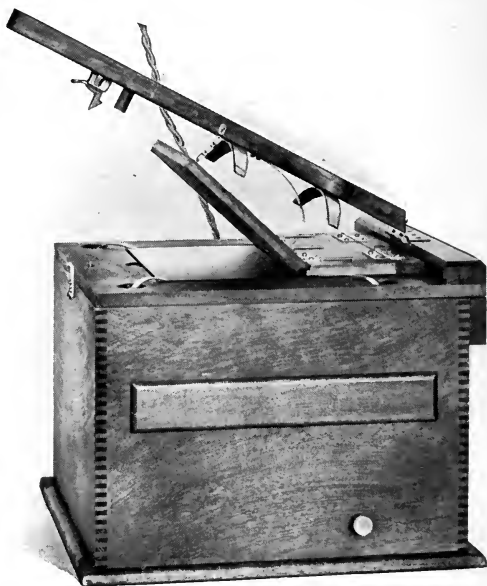
The way to sell albums is to have them in stock, show them and explain their practical usefulness. Eastman Portrait Albums are adaptable to 87% of the sizes of portraits now made by photographers.

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

All Dealers'.

*A
convenience
and an
economy
for the
printing
room.*



The No. 1 Eastman Printer

If you use a large printer for large work, you need the No. 1 Eastman Printer for small work. It is a thoroughly practical, professional printer for all sizes of negatives up to and including 5 x 7. As it burns but two 60 Watt lamps it is economical to operate. Milled head screws permit the lamps to be adjusted to any position, a red lamp furnishes a safe light for adjustment of paper on negatives and an opening on one side of the printer permits a ground glass to be inserted for diffusing the light.

The printer is operated by a hand lever which locks and automatically switches on the lights when contact is made. The printing opening is 8 x 8 inches, the box is strong and substantial.

The price with red lamp, electric cord and plug to fit \$10.00
any ordinary electric socket,

EASTMAN KODAK COMPANY,

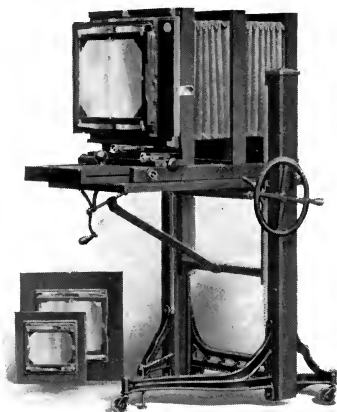
All Dealers'.

ROCHESTER, N. Y.

*The rapidity, smoothness, and precision afforded
in the operation of*

Century Studio Apparatus

are valuable requisites in every progressive studio.



Portrait film or Plates may be used in the Double View Holders which fit the 11 x 14, 8 x 10, or 5 x 7 reversible, spring actuated Ground Glass Adapter Backs, interchangeably attached to the sliding carriage.

The operator can make full sized negatives, or by the use of diaphragms and lateral movement of the sliding carriage, two 7 x 11 negatives on the same plate with the 11 x 14 back, or two 5 x 8 negatives with the 8 x 10 back.

The platform of the Semi-Centennial Stand, with camera in position, can be quickly and easily elevated to a height of 49 inches, or lowered to within 14 inches of the floor, and locked in any desirable position.

CENTURY CAMERA DEPARTMENT
EASTMAN KODAK COMPANY ROCHESTER, N. Y.

To Our Customers

It is opportune that we should express our thanks for and our appreciation of the business with which you have favored us during 1917.

Last year's line of cards was better than those offered in preceding years, but for this year the salesmen who call on you will be able to show samples of a line far surpassing its predecessors in every detail.

Canadian Card Co., Toronto, Canada.

PHOTOGRAPHIC MOUNTS
MADE IN CANADA

There are as many prospects for enlargement sales as there have been soldiers photographed.

ARTURA CARBON BLACK

enlargements have the contact
quality that makes sales easy.

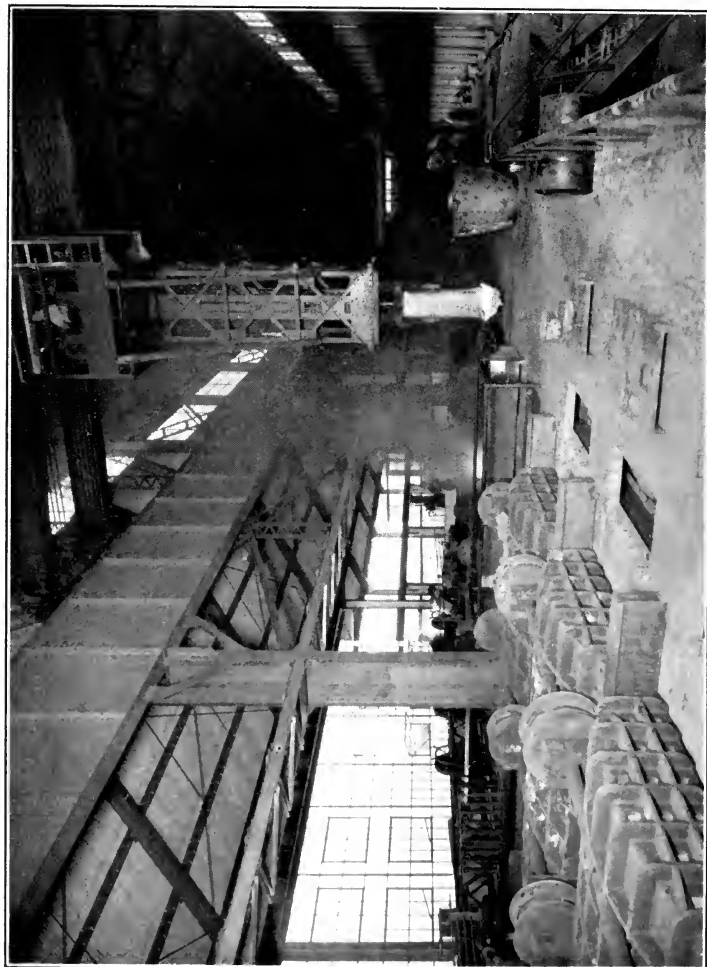


CANADIAN KODAK CO.,
LIMITED,
TORONTO, CANADA.

All Dealers'.



FROM A PORTRAIT FILM NEGATIVE



By The Luck Illustrating Co.
Cleveland, Ohio

STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

ESTABLISHED 1906

VOL. 9

FEBRUARY 1918

No. 12

FILM FOR COMMERCIAL PHOTOGRAPHY

Commercial photographic work embraces practically everything not classed as portraiture. In the lines of work included under this broad head will be found subjects of such great diversity that no one sensitive product could possibly answer all purposes. A great many subjects are found to require slow, contrasty emulsions, but there are others with such excessive contrasts that a soft working emulsion is absolutely necessary to produce the best results.

Eastman Commercial Film has been made specially for certain kinds of commercial work just as Portrait Film is made specially for portraiture, but commercial photographers have found that a great amount of their work requires an emulsion of the exact nature of Portrait Film.

Contrasty subjects where contrasts can not be reduced, ex-

posures against the light, or with strong cross lights, not only require a soft emulsion but one that has non-halation qualities as well. The fact that Eastman Portrait Film produced excellent home portrait negatives under conditions of light encountered in the average home, was proof that it would do the same in a mill, a factory or any other interior which presented difficulties.

The commercial photographer used Portrait Film primarily because of its non-halation qualities. The support is so thin that there is no room for the light to spread, so halation is practically eliminated. He found that film would do everything that a plate would do—and a lot more. It would give more quality, less halation, and greater convenience in handling.

Commercial workers have adopted Portrait Film as a product especially suited to many of their needs, and the results they have secured have made

them enthusiastic film boosters. Our illustrations are examples of Portrait Film results from the particular class of commercial subjects for which Portrait Film is specially suited. It is a big class of commercial work—not of every commercial photographer, but of many.

The results shown in these illustrations may suggest to many photographers, subjects that may have been overlooked—work that may have seemed next to impossible to handle in a perfectly satisfactory manner. The more difficult the subject, the more credit there is in a satisfactory result, and, naturally, with every new class of work the field of commercial photography is broadened, and a man's business prospects made just that much larger.

Portrait Film has undoubtedly broadened the scope of commercial work. It has not only insured greater success in photographing extremely contrasty subjects in which halation has previously had a very destructive influence, but it has also placed flash-light results on a par with daylight.

In flash-light work, Portrait Film gives decidedly softer results than plates. There is pleasing detail in highlights and half-tones, because the contrast is reduced, and contrast is reduced because the film does not permit the light to spread, as is the case with a glass support.

Eastman Commercial Film has all the physical advantages of Portrait Film, but has a slower working emulsion with the contrast necessary for photographing objects that do not have contrast in themselves or that must be lighted flat. It is a very useful product for the commercial photographer and is especially suitable for making portrait copies or positives from which negatives are to be made.

Process Film has still more contrast—will, in fact, give any degree of contrast, and is especially suitable for reproducing maps, line drawings, tracing and similar subjects where opaque backgrounds are required. With these products the commercial worker will find a film suited to almost every class of work and results that are better.



Eastman

Permanent

Crystal Pyro

*does not float about in the
air and cause trouble—
it stays where you put it.*





FROM A PORTRAIT FILM NEGATIVE

By The Luck Illustrating Co.
Cleveland, Ohio



DRAFTED

"He had never thought of being a soldier. When he heard the conscription law had passed it occurred to him that some day he might be. But that day seemed very far away. He knew that Uncle Sam was raising a big regular army and a big national guard, and he thought that would be all that was needed. People seemed to think the war would be over before many Americans could get to France, and anyhow lots of fellows would be going before he was wanted.

"Then his number came from Washington—among the first. Soon the local draft board met. He was summoned for examination. He felt rather proud when the doctor told him there was nothing the matter with him, for pride of health and strength is a human instinct. No, he had no dependents; but he had a good home, the home he was brought up in, and a mother who kept her tears to herself and would not tell him not to go. And he had a good trade, and was saving something. He was not quite sure what for—but he began to suspect, though none of those he had met so far seemed to be the right one.

"But it didn't matter so much now. He was reading the war news every day. He was learning what the enemy had been trying to do to his country. His country! It had become his country so easily and it had asked him for so little that he seldom thought of it before as his. He squared his shoulders a trifle as he realized what it meant to him. And as it came home to him that this was not only his country but that his country was depending on him for its protection, for the protection of everything that made him love life in America, pride of patriotism touched his heart, and

he promised himself, as his muscles set taut, that we will do it.

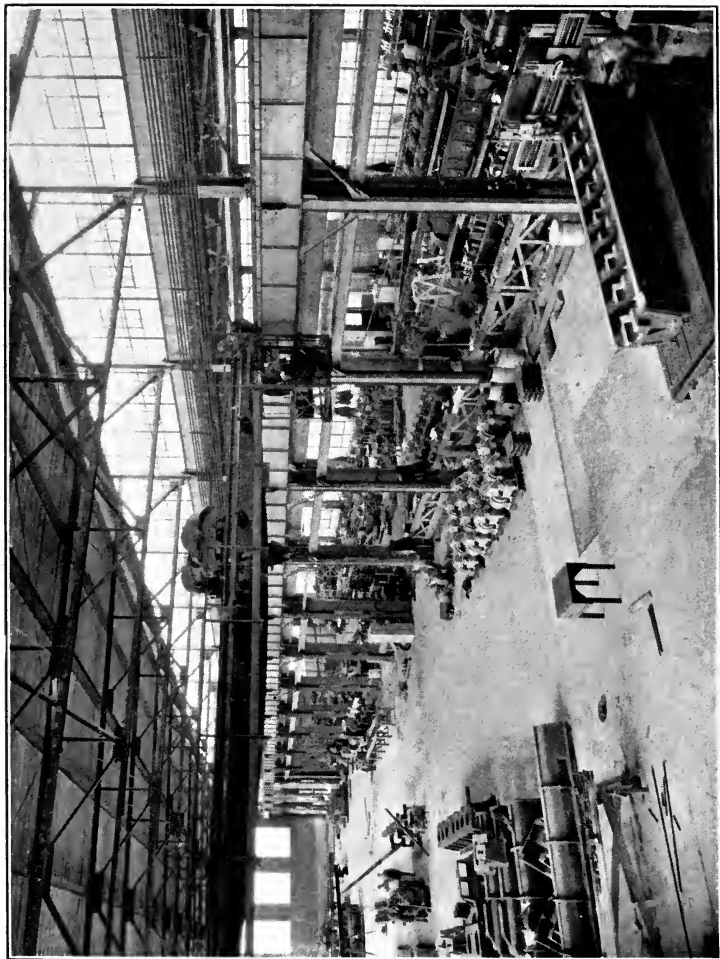
"And doing it he is, God bless him! We don't know his name, but our prayers are with him, and millions like him; and here's our hand, comrade, and everything that is back of it."—*Detroit Saturday Night*.

This is the way most of our young men do such things—they throw back their shoulders, buckle down to the task and do it, uncomplainingly. It is the brand of philosophy we are rightly proud of, and we should all have it, whether drafted or not.

Those of us who have not been drafted should not waste our time mourning the fact that age bars us from the draft or that dependents prevent us from volunteering for active service. If we can't do what our young men are doing with such commendable spirit, we should, nevertheless, do everything in our power to help those who will fight our battles for us.

Our Government has made an appeal to photographers for lenses suitable for aeroplane photography, and we have passed it on to our readers, stating as well as we knew how the urgent need for certain lenses for this important work of our aerial forces.

We have now received more definite information as to the need of lenses, since important tests have determined that certain lenses have been found most satisfactory. These lenses are therefore most urgently needed to insure the proper equipment



FROM A PORTRAIT FILM NEGATIVE

By The Luck Illustrating Co.
Cleveland, Ohio



of aero cameras that are being made an important part of the equipment of the flying forces sent to our armies in France.

Lenses are not being drafted, as are our young men, but the same philosophy that causes the drafted man to throw back his shoulders with pride in the part he is playing should cause you to do your part as cheerfully.

The lenses which have been found most useful for the special requirements of the Signal Corps are:

Carl Zeiss Tessars

Goerz Dogmars

Bausch & Lomb Zeiss Tessars

Zeiss Tessar by Ross of London

The above lenses of $8\frac{1}{4}$ to 24 inch focal lengths are those *specially* needed. If you have one of these lenses, you have, and should be glad that you have an opportunity to help your Government and your Army in its need. Other lenses are needed but these are specially needed.

We have also been informed and requested to advise the profession that the supplying of lenses to the Signal Corps has been turned over to the Equipment Division, care of Signal Equipment No. 33, 199 D St., N. E., Washington, D. C. All correspondence regarding lenses should be addressed as above.

We are also advised that there is no further need for condensing lenses.

The demand for foreign makes

of anastigmats is as great as ever but the special need is for those mentioned above. We have been asked to lay special stress, not only on the photographer doing his own part, but on the excellent service he can render the Government by co-operating with other photographers and urging them to do their part as well.

Such service is looked upon by the Signal Department as the most sincere patriotism and is thoroughly appreciated.

Enlist your lens in the army—buy one of the thousands of lenses that are on the market and that will do your work equally well and you will have come to the aid of your Government in a way of which you may be proud.



A POOR JUDGE

The human hand is a poor judge of temperature, for one hand may tell its owner that a solution is real hot while another tells its owner that the same solution is but luke-warm.

A good thermometer shows temperature with uniform accuracy—from it you know if your bath is right, thereby saving many a batch of negatives and prints that would be ruined were you to trust to your hand alone to determine whether the developer is below or above 65 degrees or 70 degrees, as circumstances require.

LOCAL CONDITIONS

If every photographer used distilled water and pure chemicals in making up his developing solutions, the formulas published by the manufacturers of plates and papers would be found to work with greater general satisfaction than any formulas the individual worker might be able to substitute.

Since distilled water is not generally used, local conditions often make it necessary for the photographer to alter the formulas recommended to suit local conditions. It is not necessary, however, to discard a tried formula simply because it does not produce the desired result under widely differing conditions. There may be exceptionally good points about a developer, that can be very readily used if a slight modification is made to allow for a condition of the local water supply.

Every man who handles sensitive products or has charge of men who do the actual handling, should have a thorough knowledge of the action of the chemicals used in a developer and should be able to balance them so that the best results may be secured regardless of the water used.

It is reasonable to believe, even against your own judgment, that the formula recommended by the manufacturer is best for his pro-

duct or it would not be recommended. If it doesn't produce good results in your hands it is probably because the water you use is not pure, your chemicals are not properly compounded or not of proper strength.

If the water you use for making up your developing solutions is strong in alkali and you are using the amount of carbonate of soda recommended, it is plain to see that your negatives will have too great contrast and will be blocked up in the highlights. Don't let a workman condemn and discard a good formula on this account. Have him use his head and reduce the amount of alkali (carbonate of soda) until the developer is properly balanced, then make the necessary change in your formula so the trouble will not occur again.

On the other hand, if a poor grade of carbonate is used and sufficient developing energy is not produced it may be necessary to increase the amount of carbonate specified in the formula. C. K. Co. Carbonate of Soda is approximately 98% pure and when other sodas are used it is usually necessary to increase the amount to secure the same result.

An excessive amount of alkali, usually resulting from water heavily charged with some form of alkali, causes a developing agent such as Pyro to act too energetically with the result that highlights are over-developed

before the delicate gradations of the shadows are normally developed. Blocky is the term usually applied to such results. The same rule applies to the color of a negative, especially if it is a Pyro developed negative, and we believe most photographers have reached the point where they are willing to admit the contention of the manufacturer that there is none better.

Once the proper degree of contrast has been secured to show all the steps of gradation from highlight to shadow, the color of the negative may then be varied to give proper printing quality.

A negative should have some color to have good printing quality, and if the negatives from the standard formula have too much color increase the amount of sulphite of soda until the color is reduced sufficiently to give you the desired result. Don't think of the beauty of the negative when you are reducing color, but judge the proper degree of color by the quality of the print the negative produces. Too many dark-room workers have the idea that if a negative looks good it will print just as good as it looks—but the printer knows better. Give the printer the quality he asks for and he will usually produce more quality in the print than you can detect in the negative.

Even a Pyro developed neg-

ative will give too little color with an excess of sulphite, so there is such a thing as going to extremes. A slight alteration of the formula given by the manufacturer is all that is necessary except under very unusual conditions.

Sulphite of soda absorbs oxygen and by so doing prevents too rapid oxidation of Pyro which gives the stain or color so desirable when properly regulated. Sulphite of soda crystals deteriorate very rapidly when exposed to air. They are changed to sulphate as they dry out and when sulphate is present the preserving action is reduced to just the extent that the sulphite has deteriorated. Dry or anhydrous sulphite does not deteriorate so rapidly but its condition is more difficult to determine. The safe rule is to buy the tested chemicals in an original package, and keep it airtight and free from moisture.

There is one other ingredient of the developer of which we wish to speak in this article. As a preservative of Pyro the use of Metabisulphite of Potassium or Bisulphite of Soda prevents oxidation to such a degree that this objection to an otherwise perfect developer is practically overcome.

A stock solution of Pyro in which either of these preservatives is used will keep for an indefinite time if ordinary precautions are observed.



FROM A PORTRAIT FILM NEGATIVE

By *The Luck Illustrating Co.*
Cleveland, Ohio



Exhaustive experiments have proved that Pyro will undoubtedly give the finest printing quality obtainable in a negative and if reasonable modifications are made as suggested, where local conditions seem to make the manufacturers' formulas unsuited to their products, they will be found, on the contrary, to be productive of better quality than any formula of the photographer's own devising.



NEW MOUNTS

You may be making negatives second to none and your prints may render to the full everything you put in the negative, but the salability of the pictures will still be influenced beneficially or the contrary by the setting or dress in which they are offered to the prospective purchaser.

The 1918 styles of the Canadian Card Co. are giving a clean-cut contradiction to the ancient belief that imported mounts were necessarily the best obtainable.

In design, in finish and in quality of stock they will win the approval even of the sternest critic, for they have been favorably passed upon by the stock-house boys who are oftentimes harder to suit than their customers, which is as it should be.

Prices are reasonable and service prompt.

MANUFACTURING CONSERVATION

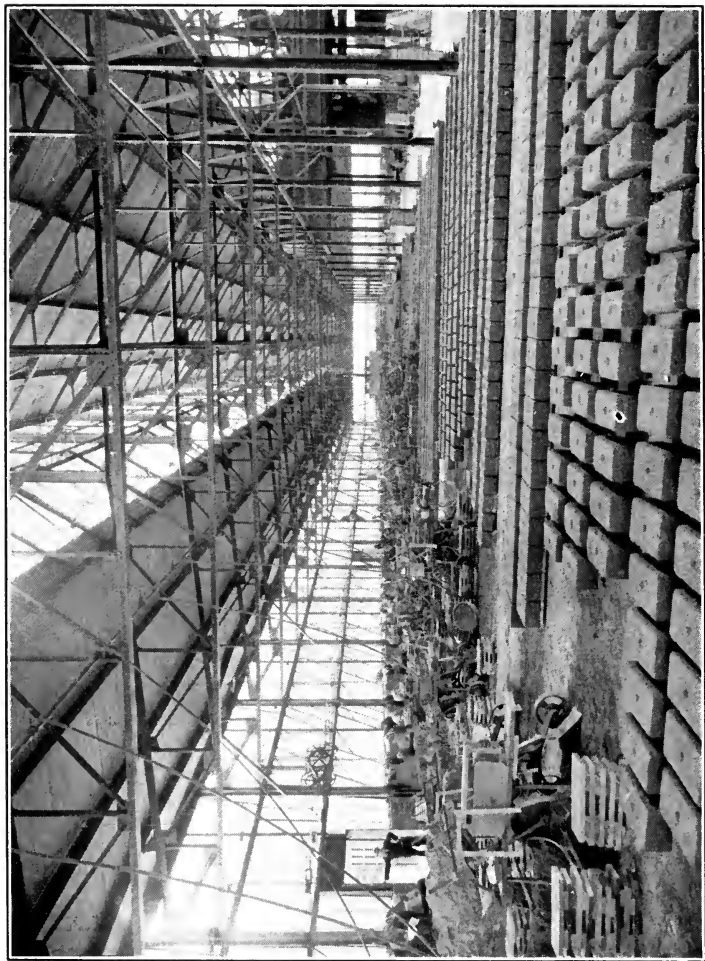
The manufacture of the following brands of photographic dry plates will be discontinued owing to the fact that they are in every case paralleled by other of our brands that answer as well or better for the special work for which these plates have been used:

Seed 27 Gilt Edge
Seed C. Ortho
Seed Non-Halation
Eastman Extra Rapid
Standard Thermic
Standard Panchromatic
Standard Slow Ortho
Standard Imperial
Standard Extra

For years there was no better plate made than the Seed 27 Gilt Edge. It was the standard of quality—the ideal plate for portraiture, and there were those who thought it was folly to even try to improve upon a sensitive emulsion that was, seemingly, as nearly perfect as any one could expect it to be.

But the manufacturers of Seed Plates were not so easily satisfied. Just as every effort has always been made to maintain the quality and uniformity of Seed products, so had every possible effort been made to produce a better product.

This was finally accomplished and the new plate was called Seed 30 Gilt Edge. It has even



FROM A PORTRAIT FILM NEGATIVE

By *The Luck Illustrating Co.*
Cleveland, Ohio



more quality than the Seed 27 and, as it is somewhat faster, it has come to be recognized as the most wonderful plate of the kind ever made and has almost entirely supplanted the Seed 27. There is no reason why Seed 27 Plates should not be discontinued when Seed 30 will do the same work and do it better. Seed 26X will fill the wants of those who desire a somewhat slower working plate.

As a substitute for Seed Non-Halation, Seed Non-Halation L. Ortho will be found equally satisfactory and its orthochromatic qualities can be used to advantage when desired. The work of the Seed C. Ortho can be equally well handled by the Stanley Commercial, which is a plate of excellent qualities.

Eastman Extra Rapid plates are very similar to, and can readily be replaced by Standard Extra Imperial, which will require no special change in manipulation.

As emulsions of all plates are now equally hardened and adapted to conditions found in tropical climates there is no further need for the Standard Thermic.

As substitutes for the Standard Panchromatic and the Standard Slow Ortho the Seed Panchromatic and the Stanley Commercial will be found perfectly satisfactory. The Stanley Commercial is one of the best orthochromatic emulsions made and has proved its worth to every commercial

worker who has given it a fair trial.

Owing to the similarity in the emulsions of the Standard Imperial and Standard Extra, the best qualities of both plates have been incorporated in a new brand to be known as Standard Extra Imperial. We feel sure that this new plate will be found equally satisfactory to the users of either of the former brands.

Discontinuing the above brands of plates and substituting those suggested, which will do the work equally well or better, will permit of a considerable conservation of manufacturing facilities at a time when such measures are most desirable and necessary.

Our Canadian readers are interested in some of these brands of plates, but it should be borne in mind that the plates discontinued or the substitutes suggested were never on the Canadian market.



Advertise, portraits of the home folks for the soldiers in camp. Nothing is more appreciated than the letter containing a portrait of mother or father, sister or brother, or some dear friend. It is absolutely necessary to keep our soldiers cheerful, and nothing will do it so well as pictures from home.



FROM A PORTRAIT FILM NEGATIVE

*By The Luck Illustrating Co.
Cleveland, Ohio*



CHEMICAL POISONING

Some people are very susceptible to the irritating effect produced on the skin by coal tar developers. Others working under the same conditions are not at all affected.

The results in all cases are about the same and the same preventive measures may be used. From a digest of all the available information on the subject it appears that the chemical poisoning is secondary to the action of the alkali in the developer on the skin.

The alkali partially dissolves the outer skin and causes deep cracks to form. This exposes the under layers of the skin to attack by the developing agent and its oxidation products.

The following facts have been fairly well established. Potassium Carbonate in a developer is slightly less liable to cause the trouble than Sodium Carbonate. This is because Potassium Carbonate absorbs moisture from the air and remains in solution, while Sodium Carbonate dries to a powdery form on the hands and causes the skin to crack. The use of Potassium Carbonate, however, does not prevent the trouble.

A non-alkaline developer like Amidol or Acrol does not give much trouble, although a few cases of Amidol poisoning are on record. In this case also the drying of the Sodium Sulphite

on the hands has the effect of causing the skin to crack in the same way as Sodium Carbonate.

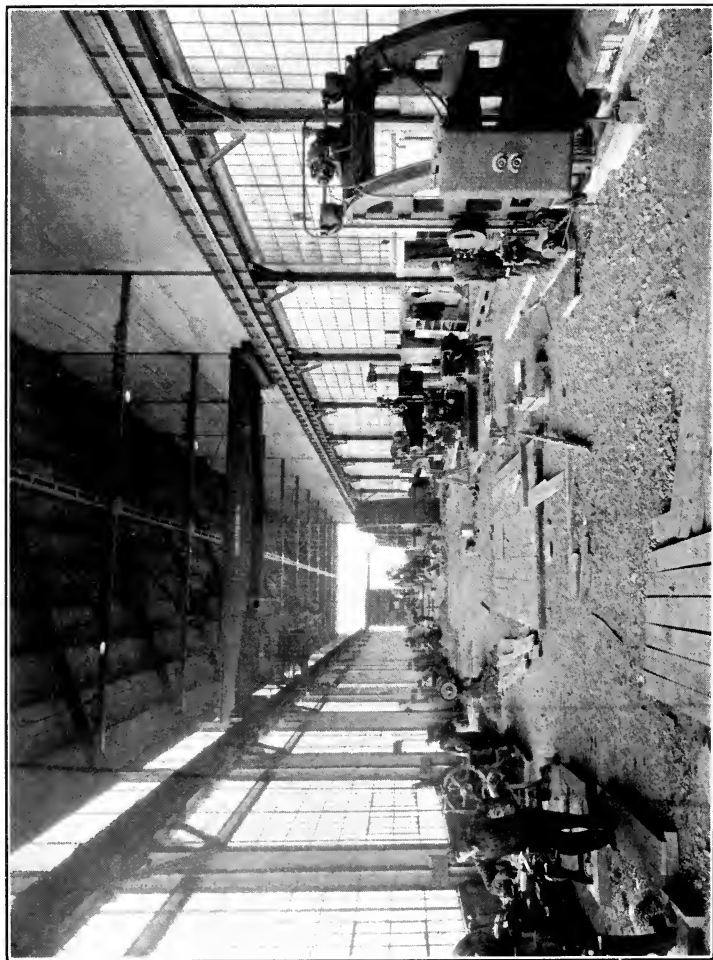
It is very necessary, therefore, when working with chemical solutions to thoroughly remove them from the hands by washing with water before crystallization takes place within the pores of the skin. The reason why most poisoning is caused by developers is because it is very difficult to remove alkali from the skin by washing, especially if the skin is at all cracked. By bathing the hands in a weak solution of acid the alkali is neutralized and the salt thus formed is very readily removed by washing.

Bathing the hands in weak acid at intervals during development is almost a certain preventive and several cases are recorded where a cure has been effected by rubbing the hands well several times a day with the following:

Acetic Acid No. 8	. 1 oz.
Water	. . . . . 2 ozs.
Salt	. . . . . 1 tblsp.

A two per cent. solution of Hydrochloric acid to be used in the same way, is also recommended.

If an acid stop bath is used between developing and fixing, bathing the hands is done unconsciously, and several persons are known to have been cured in this way. It is very important, however, to thoroughly wash the hands in water after treatment with the acid.



FROM A PORTRAIT FILM NEGATIVE

By The Luck Illustrating Co.
Cleveland, Ohio



If the hands are badly stained with the developing agent the stain should be removed, otherwise it may act as a continuous irritant when the skin is cracked and its pores are open. This may be done by washing the hands in a permanganate solution and subsequently removing the stain with oxalic acid. The permanganate will cause a smarting sensation for the time being, but this is counteracted by the oxalic acid, which removes both the oxidized developing agent and the permanganate stain and leaves the irritated skin in a better condition for healing. The following strengths of solutions should be used:

A

Potassium Permanganate 55 grs.
Sulphuric Acid (concentrated) 1 dram
Water 60 ozs.

B

Oxalic Acid 1 oz.
Water 50 ozs.

After treatment with oxalic acid the hands should be washed thoroughly.

Once the skin is clean and free from irritating chemicals a cold cream or ointment may effectively be used to prevent access of the developer to the under layers of the skin. Healing is sometimes aided by an ointment of the following nature:

Ichthyol 1 oz.
Resorcin 1 oz.
Glycerine 1 oz.
Zinc oxide $\frac{1}{2}$ oz.
White paraffin ointment 6 ozs.

To summarize, the best preventive is to wash the hands thoroughly immediately after removing them from the chemical solutions. When developing, the hands should be frequently rinsed in the acid stop bath or in the wash water, in order to prevent, at any time, the crystallization of the solution on the hands. Before drying the hands should be washed with a weak acid solution and thoroughly rinsed for one or two minutes in plain water.

The best cure would seem to be a thorough cleansing of the hands, which will remove any trace of the chemical which causes the irritation and the use of an oily ointment which will fill the pores of the skin and prevent the poison from again reaching the sensitive under layers of the skin.

The use of rubber gloves is advisable in effecting a cure, as they afford the best possible protection. In all cases it is advisable to consult a physician, as the condition of one's health has a general bearing on local affections of this nature.





FROM A PORTRAIT FILM NEGATIVE

By *The Luck Illustrating Co.*
Cleveland, Ohio



EASTMAN COMMERCIAL ORTHO FILM

Commercial Ortho Film is the latest addition to the list of film products which have been offered the photographer. As with other film products it has been given a thorough try-out in advance of its general announcement to the profession and it has more than made good in the special work for which it is intended.

Upon the introduction of Portrait Film the commercial photographer saw its advantages and was quick to make use of them.

Portrait Film could not be improved upon for many subjects, but the great amount of commercial work requiring a slower emulsion with a steeper scale of contrast made a film of these qualities especially desirable, and this demand has been met by Eastman Commercial Film, which was announced in July, 1917.

Eastman Commercial Ortho Film now makes the film line about as complete as the commercial worker could wish it. It has considerably more speed than the Seed 23 Plate, great latitude, fine grain and, in addition, orthochromatic quality that is equal if not superior to that of any commercial ortho plate made.

Commercial Ortho Films will answer every requirement of the commercial worker for color sensitiveness, except for those few

subjects requiring the red-sensitive Panchromatic emulsion. It gives excellent separation of yellows and greens, and is so sensitive to these colors that when the Wratten K filters are used, the factor with the K 1 filter is only $3\frac{1}{2}$ and with the K 2 filter, 15.

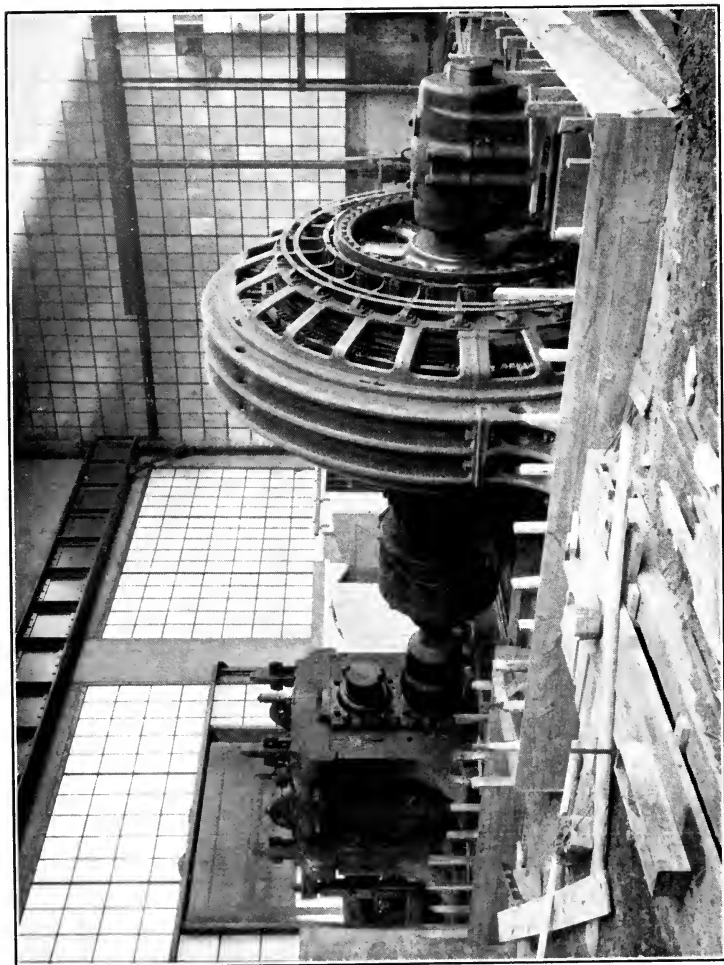
These factors, which show the number of times the exposure without a filter must be multiplied to secure the same exposure when the filter is used, are based on exposures that show shadow detail and indicate the extreme color sensitiveness of Ortho film.

For furniture work, the majority of yellow woods, including unfinished mahogany, can, as a rule, be photographed with the K 1 filter with excellent results. As an object will photograph very much as it appears when viewed through the filter, the correct filter to use can often be determined in this way.

Commercial Ortho Film, in addition to the quality of its emulsion, has all the advantages of other film products—is non-halation, unbreakable, light in weight and convenient to handle. It is furnished in regular sizes at the same prices as for Eastman Portrait Film and can be furnished by your stock house.



*For certainty of results use
Seed Plates and
Artura Papers.*



FROM A PORTRAIT FILM NEGATIVE

By The Luck Illustrating Co.
Cleveland, Ohio



BETTER BUSINESS METHODS

The legislative program of the Union Government at Ottawa will, according to some newspapers, probably comprise the imposition of a tax on the average income, and there are a great many photographers throughout the country who are interested in knowing what their actual incomes have been for the last year. It is an easy thing to know if a simple system of books is kept, an inventory taken in a dull season and a statement of business made up.

The greatest trouble is not in the actual keeping of a set of books, but in getting the photographer to realize the importance of such a business record. The income is, as a rule, over-rated because profit is over-rated and expense under-rated. Many a man will insist he has made a good profit, yet for the life of him he can't say where the money has gone.

You can be quite sure that the man who says his business is paying him a good profit will have something tangible to show for it at the end of the year or he has been mistaken in the real condition of his business. In these trying times there should be no guessing about our profits and our expenses. We have made money or we have lost money, and a simple statement from a

simple system of records will show how we stand.

The profit of a business cannot go back into the business except as the business is enlarged. If it is necessary for money to go into a business, it is expense. The man who says he is putting most of his profits into his business is mistaken, for the money he puts back is not profit unless it enlarges his investment or working capital and so enables him to do a larger business.

Mistaken ideas regarding costs are responsible for mistaken ideas regarding profits, and both are due to a lack of proper method, or no method at all, of accounting.

Your gross profit for a year is your inventory, figured at cost prices plus freight, plus your year's sales, minus your year's purchases—but this is *Gross Profit*. From this must be deducted all salaries, rents and other expenses to determine actual *Net Profit*.

Expenses of doing business include all salaries, including your own as manager of the business, advertising, delivery expenses, rent, heat, light, power, repairs and renewals of equipment, depreciation of equipment, insurance on stock and equipment, taxes and licenses, office supplies and expenses, miscellaneous expenses and losses from bad debts.

Ask your stock house for the booklet, "System for the Photographic Studio."

Cheer your
soldier with
the best news
from home—
your photo-
graph.

*Make
the appointment
to-day.*



THE PYRO STUDIO

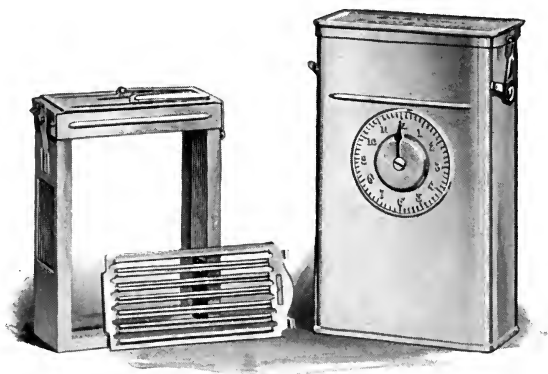
Line cut No. 249. Price, 50 cents.

THE ONLY CONDITION

We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first*. C. K. CO., LTD.



Develop in the

Eastman Plate Tank

A better and more uniform quality of negatives is the result of a more evenly maintained temperature of the developer—the negatives are cleaner because the air-tight and light-tight tank prevents fog and obviates the necessity for handling. The time in the dark-room is the actual time necessary for loading and unloading the tank.

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

ENLIST YOUR LENS IN THE U. S. ARMY

The people are asked to help the Signal Corps of the Army get lenses enough for cameras for the fleet of observation airplanes now being built. The need is immediate and of great importance. The lens is the eye of the Army.

The situation is that, American manufacturers are not yet in a position to meet the sudden demand for special lenses for aerial service. Possessors of the required types are, therefore, urged to do their bit by enlisting their lenses in the service of the Army. They are asked to immediately notify

Equipment Division

Care of Signal Equipment No. 33

119 D Street, N. E.

Washington, D. C.

of lenses of the following descriptions which they are willing to sell, stating price asked:

Tessar Anastigmat Lenses made by Carl Zeiss, Jena, Zeiss Tessar by Ross of London and Goerz Dogmar, of working apertures of F. 3.5 or F. 4.5, from $8\frac{1}{4}$ to 20 inch focal length.

Bausch & Lomb Zeiss Tessars, F. 4.5, from $8\frac{1}{2}$ to 20 inch focal length.

Voigtlander Heliar Anastigmat Lenses, F. 4.5, $8\frac{1}{4}$ to 24 inch focal length.

Practically all of the lenses of these and other foreign makes of anastigmats in America will be required, but the $8\frac{1}{4}$ inch lenses are most urgently needed, also a number of Bausch & Lomb Zeiss Protars VII A No. 13, preferably set in Volute shutters.

(It is requested that the press and individuals giving publicity to the above give the specifications of the lenses desired accurately. This will avoid the labor and delay of unnecessary correspondence with people offering lenses that are unsuitable.)

WANTED

DISCARDED NEGATIVES

We purchase discarded negatives of standard sizes from $4\frac{3}{4}$ x $6\frac{1}{2}$ to 20 x 24, providing same are in good condition and are carefully packed in accordance with our instructions.

We will pay all the freight on shipments of 100 lbs. or more, except from localities where the freight rate exceeds \$1.00 per 100 lbs., in which case the shipper will be required to pay the excess.

Before making any shipment please secure these instructions, prices and further particulars, which will be furnished on application.

Canadian Kodak Co., Limited,
Toronto, Canada

Address shipments to West Toronto.

TOZOL

The Complete Developer for Photographic Papers

Prepared exactly as it was before the war. It's right just as it is, requires the addition of no developing agent, is not a substitute. We recommend it for Artura, Azo and Velox papers—the price is reasonable.

THE PRICE

1 oz. bottle	\$ 1.10
$\frac{1}{4}$ lb. bottle	4.00
$\frac{1}{2}$ lb. bottle	7 75
1 lb. bottle	15.00

Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.

How do you care for portraits in *your* home?
Sell yourself a portrait album and you will have
no trouble in selling your customers.



EASTMAN PORTRAIT ALBUMS

in the homes of your patrons will increase your business by stimulating the interchange of photographs. An album that will hold forty-eight photographs will create a demand for forty-eight portraits to fill it.

The way to sell albums is to have them in stock, show them and explain their practical usefulness. Eastman Portrait Albums are adaptable to 87% of the sizes of portraits now made by photographers.

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

All Dealers'.

Two methods of dark room illumination that you can be sure are safe.

Kodak Safelight Lamp



By employing reflected light which shines through a Wratten Safelight, the greatest volume of illumination that can be used with safety is secured. You have a safe light *and yet there's more of it.* Interior of lamp is enameled a brilliant white to intensify light reflection.

Kodak Safelight Lamp supplied with safelight and four feet of electric light cord with plug . . . \$4.00



Brownie Safelight Lamp

This lamp is admirably adapted to plate or film changing. Screwed into the ordinary electric light socket, in the wall or on a cord, the Brownie Safelight Lamp instantly provides a means of safe illumination. Both safelights, the circular one at the end and the rectangular one at the side, are removable.

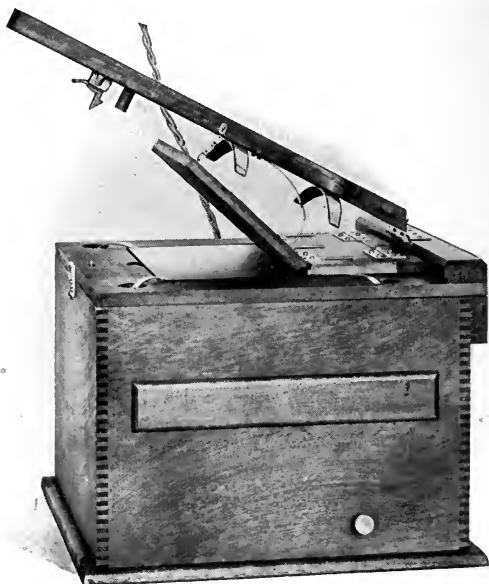
Brownie Safelight Lamp \$1.25

Canadian Kodak Co., Limited,

All Dealers'.

Toronto, Canada.

*A
convenience
and an
economy
for the
printing
room.*



The No. 1 Eastman Printer

If you use a large printer for large work, you need the No. 1 Eastman Printer for small work. It is a thoroughly practical, professional printer for all sizes of negatives up to and including 5 x 7. As it burns but two 60 Watt lamps it is economical to operate. Milled head screws permit the lamps to be adjusted to any position, a red lamp furnishes a safe light for adjustment of paper on negatives and an opening on one side of the printer permits a ground glass to be inserted for diffusing the light.

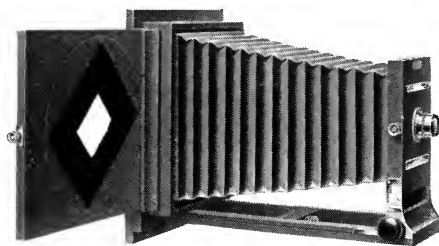
The printer is operated by a hand lever which locks and automatically switches on the lights when contact is made. The printing opening is 8 x 8 inches, the box is strong and substantial.

The price with red lamp, electric cord and plug to fit \$10.00
any ordinary electric socket,

EASTMAN KODAK COMPANY,

All Dealers',

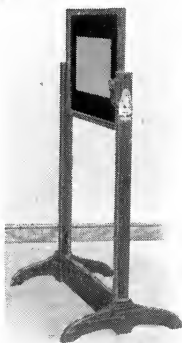
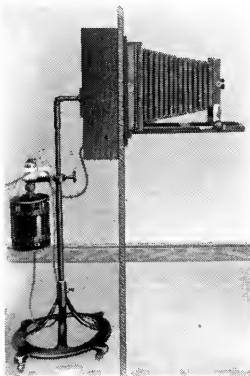
ROCHESTER, N. Y.



The R. B. Enlarging Camera

will take Negatives of any size up to 8 x 10.

The Sliding and Revolving Negative Carrier, in combination with the Rising Front, permits quick and accurate centering of the Enlargement upon the Easel.



Focal Capacity of Camera, 22 inches, with Rack and Pinion for focusing; lens board $5\frac{1}{2}$ inches square.

All Dealers

FOLMER & SCHWING DEPARTMENT

EASTMAN KODAK CO.

ROCHESTER, N. Y.

Style Pendleton

Feature this Folder for Your Slip-in Corner Prints.



*Made in Two Colors,
Grey and Brown.
For 4 x 6 Square Prints Only.*

The Pendleton is a very attractive corner holder style for your best grade 4 x 6 square prints. The Inserts and Covers are rare combinations of beautiful color contrasts, and tinting on insert, and embossing gives an effect of double insert mounting. Cover is of rich fabric finish and very attractive crest. The Pendleton has quality and style.

SAMPLE MAILED FREE

MANUFACTURED BY

Canadian Card Co., Toronto, Canada.

PHOTOGRAPHIC MOUNTS

MADE IN CANADA

ARTURA

speaks for itself—the
whole story of quality
is told by the finished
portrait.



CANADIAN KODAK CO.,
LIMITED,
TORONTO, CANADA.

All Dealers'.



APPROACH TO ADMINISTRATION BUILDING, KODAK PARK

STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

ESTABLISHED 1906

VOL. 10

MARCH 1918

No. 1

KODAK PARK A TRAINING CAMP

Kodak Park is in the war. From reveille to taps, it is alive with lads in khaki. With its barracks and mess hall and instruction quarters, it has taken on the aspect of an army cantonment.

Nor are these play soldiers that are quartered there. They are the boys who soon will be "over there" doing their part, often within range of the big German guns, that the fight may be kept over there, not finished over here.

But it is not how to advance in open order, how to bomb a boche dug-out or parry a bayonet thrust that they will be taught in their training. They are learning how to develop the negatives brought back to them by the scouts of the air; negatives that tell where the howitzers are concealed, where the lines are weak and where they are strong, by what routes supplies are brought

up, what movements of troops are being made—will tell General Pershing the thousand and one things that he wants to know and that Hindenburg doesn't want him to know.

We think of aeroplanes as bomb droppers, as brilliant air duelists rat-tat-ting each other with Lewis guns; but the big part of the work is bringing back pictures of the enemy terrain, pictures on which the immediate activities of the army are based. Aeroplanes fight duels in the air, of course, fight them every day, and it is these brilliant exhibitions of daring that find space in the news columns—but, as a rule, their fighting is to protect their own photographers or to "down" an enemy plane that is likewise on a photographic scouting expedition.

Before the successful advance at Vimy Ridge, hundreds of aerial photographs showed the exact location of the enemy guns and strongholds, showed them so ac-

curately that they were demolished in the hurricane of big gun fire before the eager infantrymen dashed across no-man's land to victory.

Our own vast aeroplane fleet, now in the making, is likewise to provide the scouts for the army, and cameras will be their eyes. Photography, therefore, looms big in the war program. Men must not only be taught how to fight, but men must be taught how to fly, how to photograph and how to develop and how to print. From four to five thousand men are needed, and at once, to do the photographic work back of the lines, to translate, for the commanding officers, the photographic message that the scouts bring back from the skies.

And these men are to be trained in photography at Kodak Park.

It was a great satisfaction to us that at this critical time we could offer our government the facilities of our great plant for the training of these men, and, for what is equally important, the manufacture of the special apparatus and materials that are so urgently needed. We had not only the largest and most complete photographic manufacturing plant in the world, but we also had a coordination of resources that enabled us to devise cameras for special needs, to equip them with special lenses

of our own calculation, ground by our own workmen, and to produce the sensitive materials best suited to the peculiar requirements of war photography. Here was an organization with its marvelously equipped Research Laboratory and a great force of engineering, scientific and inventive specialists, all working to broaden and better photography. Apparently it was following what was strictly one of the pursuits of peace—but war came and it was ready.

The photographic activities of the army are all under the Signal Corps, and it was, therefore, to that division that we specifically offered our services for the training of men as well as for the designing and making of whatever might be required to perfect its photographic equipment:

"To provide school accommodations and instructors for training men for the photographic work of the Aviation Section, in Rochester, with experts to take charge of the work so far as their services were required, and to select and recommend some of our younger specialists for service with the Aviation Section here and abroad.

"To construct and submit experimental cameras, and submit blue prints of same so that tenders for their construction could be obtained from other firms as well as our own.

"To send emulsion experts to aviation fields to experiment on differ-



EXTERIOR OF BUILDING IN WHICH SOLDIERS WILL BE QUARTERED AND
TRAINED FOR THE SIGNAL CORPS

ent types of sensitive material, and to advise which we found best suited to aviation photography.

"To design a photographic motor truck for field work and submit detail drawings for a photographic field laboratory.

"To make tenders for all special apparatus and materials required by the Section, based strictly on their cost to us plus ten per cent. to cover contingencies, it not being our intention to make any profit whatever out of these materials."

That our offer to place everything that we have and everything that we are, in the service for the winning of the war was evidently appreciated at headquarters—an appreciation that makes us all the more anxious to do well our part—is evidenced by the following communications from Major General Squier, Col. Engel and Lieut. Col. Horner: "Eastman Kodak Co.,

Rochester, N. Y.

The beginning of the new year brings with it a thorough realization of responsibility which rests upon everyone connected with the carrying out of the aircraft programme. We appreciate what you are doing to co-operate in this work. We know you realize that it is with only the most intense effort that the task can be successfully accomplished. The country looks to you for great achievements during the coming year. SQUIER, Major General,

Chief Signal Officer."

The following is an excerpt from a letter from Colonel Engel, dated January 16, 1918:

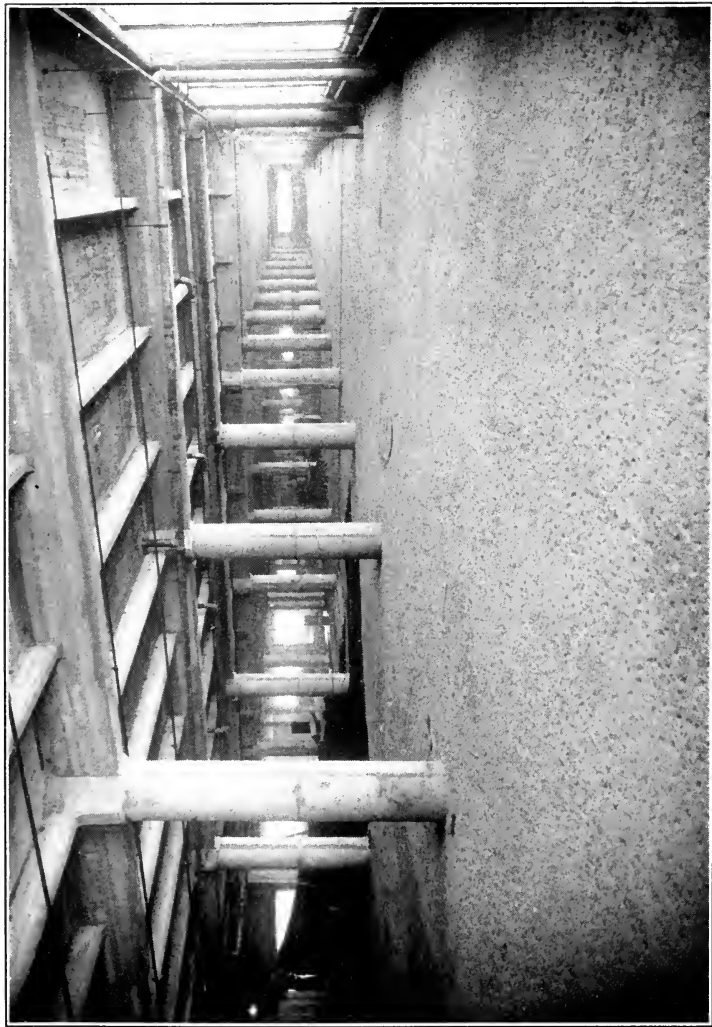
"This is by far the best offer that the undersigned has ever seen to help us in getting our units trained and equipped. I have just left the office of General Squier, and he is certainly delighted with everything."

Lieut. Colonel L. S. Horner wrote us along these same lines on February 6, 1918:

"The management of the Equipment Division of the Signal Corps is more than satisfied with the broad-gauged American way which you and your Company have offered to assist us and are assisting us."

But to get back to Kodak Park: The necessity was for providing, at the earliest possible date, four or five thousand skilled photographers to do the ground work connected with aerial photography. The Signal Corps has the men, and as we have the facilities at the Park for training them, we offered, without charge, the use, until August 1st, of one floor of our new baryta building just being completed, for barracks and dark-rooms, and the use of our restaurant building, when not in use by our own employes, to feed the men. We also offered to furnish class rooms, a lecture room and recreation facilities.

The offer was accepted in a



PART OF UNFINISHED INTERIOR OF BUILDING WHICH, WITH FITTINGS INSTALLED, WILL PROVIDE
IDEAL BARRACKS AND WORK ROOMS FOR THE SOLDIER PHOTOGRAPHERS

telegram, dated Jan. 30th, as follows:

"Eastman Kodak Co.,
Rochester, N. Y.

Your kind offer approved by Secretary of War.

SQUIER, Chief Signal Officer,
per Williams."

Engineers and experts were sent at once by the Government to prepare plans and let contracts for installing the special fixtures and for preparing sleeping accommodations for the men, who are now taking up their training.

The building, which was selected for the barracks, is the largest building at Kodak Park. It is 150 feet wide by 560 feet long and contains nine acres of floor space, the one floor which is to be used by the men as a barracks and work rooms containing over two acres of floor space, which will be ample to accommodate seven hundred men at one time.

The men will be sent in detachments of about that number and it is expected that it will take about a month of intensive training to fit each lot of men for the special work they are to perform.

Our restaurant building, which will be used by the men of the school, has ample accommodations for feeding two thousand persons at one time, and as the soldiers' meal hours will not con-

flict with those of our employees, there will be no question of our ability to feed a few hundreds extra, and do it well.

There are ample facilities for recreation at Kodak Park, both indoors and out, and the Kodak Park Athletic Association will welcome the soldier students and extend to them the use of the Park Assembly Hall and the athletic grounds.

The "observers" who operate the cameras from aeroplanes are not necessarily technical photographers. As they always make their photographs from a considerable elevation, they are working invariably at "infinity." They, therefore do not need to focus nor to judge the length of exposure. Everything is set for them by the ground men before they go aloft. All they need to do is to pull the lever that makes the exposures. And the instant they alight, their negatives are developed and the prints and enlargements made by the expert ground men, who not only know how to develop and print, but know how to use all the short-cut methods that save time. The aerial photographer snaps a German position miles back of the lines and, in apparent retreat, at a speed of more than a hundred miles an hour, rushes back to his base, spirals at break-neck speed to his landing, quickly hands his exposures over to the waiting ground man. It is but a



A Corner of the Kodak Park Athletic Field

matter of minutes from the time that the exposure was made until the finished enlargement, still damp no doubt, is in the hands of the commanding officer. And the information it gives him may be vital, often is vital, to the success of his troops.

It is to the training of these highly important ground men of the Signal Corps that so much attention is now being given, that they may work accurately and rapidly. Fortunately, our facilities are such that they may be given the needed instruction promptly and thoroughly—will be quickly equipped with the knowledge which will enable them to be of as great service as the men on the firing line.

The location of the school in Rochester is, of course, an emergency measure, and it will probably be moved later on to one of the big aviation fields. The school is wholly under the Sig-

nal Corps officers detailed for the purpose, but they will be assisted by about fifty instructors taken from our technical staff in different departments, including the Research Laboratory, Eastman Professional School, Demonstrating Force, etc. These men will be replaced by army instructors as fast as the latter become sufficiently familiar with the work.

While there will be no flying school here, there will probably be a few planes installed in one of the parks, which has been offered by the City, and these will be used to make photographic experiments in connection with the work of the school.

Through the acceptance by the War Department of our tender of the facilities at our command, Rochester is more than maintaining its claim to the title, "The Photographic Center of the World."

ARTIFICIAL ILLUMINANTS

While in the early days of photography practically the only source of light was the sun, the use of artificial illuminants is constantly increasing. Many kinds of light are available and they are being made in such convenient form that the studio that depends entirely upon sunlight has come to be the exception.

The advantages of artificial illuminants, which have caused their more general use, are their constancy and the fact that they permit the photographer to work at all hours of the day or night. Variation of the intensity of daylight makes the judging of time for which sensitive material must be exposed so difficult that the photographer must acquire considerable skill to avoid incorrect exposure with its resulting waste of material. With most artificial illuminants the matter of exposure can be reduced to a simple calculation of time.

The possibility of working at any time under evenly uniform conditions is certainly an advantage in portraiture, commercial work, printing, enlarging and photo engraving.

For portraiture and commercial work a large diffused light source is essential and only occasionally can a concentrated light source be used. A broad source of light, such as that given by

the mercury vapor lamp, or a diffusing system must be arranged.

The lights best suited to portraiture are the white flame arc's mercury vapor, enclosed arcs and nitrogen tungsten. The scale, gradation and latitude of emulsions vary with the color of the light, so color is an important factor in the quality of results. The blue-violet light containing the greatest amount of ultra-violet will give the greatest gradation, while gradation will be less perfect with light containing more yellow and red.

As halation is caused by the penetration of light through the emulsion and its reflection from the back of the support, there is more halation from the light containing yellow and red because these penetrate the emulsion. The yellow color of the emulsion acts as a filter in stopping out the ultra-violet and blue-violet light and materially reduces halation, making such a light especially suitable for producing negatives of the best technical quality.

For color separation in commercial work, especially when a panchromatic plate must be used to secure a correct rendering of objects containing red, the mercury vapor light is useless, as it is completely minus red. As a consequence, red objects will not be recorded regardless of whether a filter is used or not. All red will appear as black.



A PART OF THE MOST COMPLETE PHOTOGRAPHIC LIBRARY IN AMERICA, AT KODAK PARK

For such work nitrogen tungsten lamps are especially good, while the white flame arc is good and the enclosed arc fair.

For printing, most any of these lights are satisfactory, constancy being most important, but tungsten lamps are most generally used. When a very strong light is used and short exposures made, a lack of flicker is so important that arc lamps are not practical. We have heard of one large firm which uses mercury vapor lamps, which are held constant by a resistance and ameter, the current being watched and the exposures timed accurately as a result.

For enlarging it has been customary to use an arc lamp, except when condensers are used, in which case it is best to use a concentrated filament tungsten lamp with a suitable reflector, because of its great constancy. When arc lamps are used without condensers a diffusing screen should be placed between the light and the negative, opal glass being best for this purpose. If mercury vapor lamps are used a powerful diffuser is not needed, a sheet of ground glass being sufficient if several small tubes are parallel to each other a short distance apart. As Artura Carbon Black is more sensitive to the ultra-violet of the mercury light than other papers, and as a blue-tone negative transmits this light while a pyro stained negative partially absorbs it, the ten-

dency with this paper and blue negatives is to over-expose and produce flat prints. This penetrating quality of the mercury light is deceptive, because the ultra-violet light is invisible to the eye but has a decided effect upon the photographic paper.



WHEN THE SALESMAN CALLS

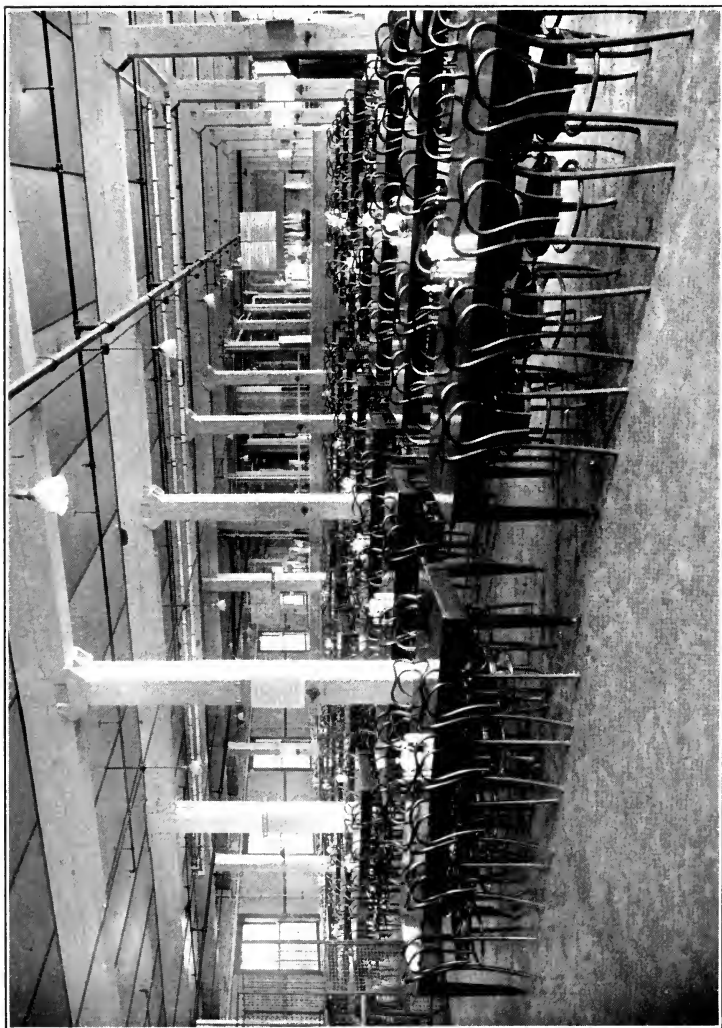
Next time the stock house salesman calls, you will find it more than ever worth your while to have him show you in detail the mounts offered by the Canadian Card Co. this Spring.

Get him to start on the new 1918 styles and you will not be long in expressing the same candid admiration and approval as have so many others.

A comment that hit the mark came from a stock-house veteran—"Mounts like these at such moderate prices should prompt the photographer to make his prints equal to the folders that will enclose them"—and he might just as well have added that good prints in classy folders have always brought good prices.

Whatever may be your requirements you can meet them from the samples shown by the salesman, and they will soon be reproduced in the new 1918 catalogue.





ONE OF THE TWO FLOORS OF THE RESTAURANT BUILDING EQUIPPED FOR FEEDING
OVER TWO THOUSAND EMPLOYEES AT ONE TIME

READY-RULED MASK- ING BLANKS

Which is better, to spend a lot of time in marking and cutting out masks for negatives of which only a part is to be printed, or to have on hand ready-ruled blanks from which you can at once cut masks of any shape desired? You can get ready-ruled EASTMAN MASK CHARTS in sizes 5x7, 8x10 and 11x14, at 10c., 15c. and 30c. per dozen respectively.



YOUR VIEW CAMERA

Even the abnormally severe winter must end and then your View Camera will be coming back into its own, for with our wonderful 1918 programme of agricultural and industrial activity there will certainly be a large amount of commercial and view work to be done which should last for months and months, culminating in the picturing of the bountiful crops.

How is your equipment? It is hardly wise to restrict one's ability to do remunerative work by sticking to inefficient tools and it may be that the old reliable can be of greater usefulness as part of your enlarging plant than in doing the outside work for which a modern camera would serve better. If the camera itself is all right a set of Wratten filters would considerably widen

the scope of work you can undertake, with confidence.

The reliable Eastman View Camera No. 2 and Wratten & Wainwright filters are listed on pages 29 and 30 for your convenience. Order from your stock house promptly.



READY WHEN WANTED

You may get along for days without having to do any intensifying or reducing, but you cannot say when such work will be absolutely necessary to get the best results from a negative, and it is a queer coincidence that such measures usually seem to be required by negatives that have to be printed in a rush or that cannot be re-made.

For just such an occasion:

EASTMAN INTENSIFIER combines rapidity of action with permanency of results. When used as two solutions will retain its strength indefinitely if kept in well stoppered bottles. As one solution will last much longer than any other intensifier on the market. Full directions are given on the tube. Price per tube, 15 cents. Also a liquid Intensifier, 8-oz. bottle, 35 cents.

EASTMAN REDUCER AND STAIN REMOVER. Unequaled for quickness and certainty of results if the directions given on the tubes are followed. Price per package of 5 tubes, 50 cents.



ASSEMBLY HALL, THIRD FLOOR OF RESTAURANT BUILDING, WHICH MAY BE USED BY THE
SOLDIERS FOR SETTING-UP EXERCISES AND INDOOR SPORTS

THEY POSE THEMSELVES

The one big difficulty in securing satisfactory portraits of children is that you can not pose them. If left to themselves, they will assume attitudes and expressions that far surpass any conscious effect that can be secured by even the most skillful photographer. To catch these fleeting pictures—for pictures they are—has been the despair of photographers who have not been equipped with suitable apparatus for obtaining them.

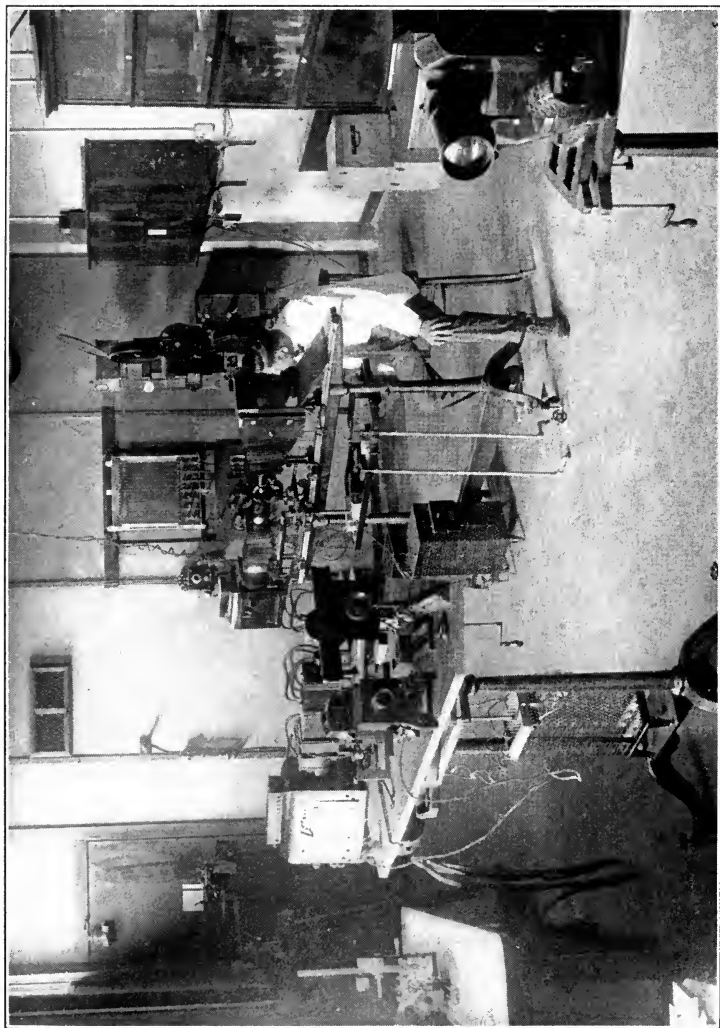
It is seldom that children care whether they pose well or not. Usually they are in the studio against their will and in unusual apparel. The appearance of a strange person endeavoring to make himself violently agreeable, and disappearing at frequent intervals under a black cloth, is highly disconcerting, and it is only after the expenditure of much time and patience that the photographer is rewarded with a creditable negative.

The Home Portrait Graflex has changed all this. The photographer carries the camera in his hands. When he looks down in the focusing hood he sees the image right side up, the full size of the plate, and when the picture on the screen looks the way he wants it, a pressure on the release makes the picture—instantly. There is no time lost

inserting plate holders and drawing the slide, as the plate holder is in position with the slide drawn while he is focusing his subject. The child can move about to suit itself, the operator adjusting the focus as the subject approaches, or recedes from, the camera. There is no uncertainty. The operator knows that the finished print will be an exact reproduction of the image on the focusing screen as it appeared at the time the exposure was made.

It is in the home, where the photographer has but few facilities for controlling the light, that the Home Portrait Graflex shows its wonderful efficiency in securing fully timed short exposures, and under a skylight in the studio the results are even better, as here the photographer has at hand the necessary equipment for regulating the light. Outdoor portraiture of children has proved to be a surprisingly satisfactory source of profit to Graflex operators, as there is a steadily growing demand for outdoor pictures of children at play on the lawn, in the gardens, or on verandas. The Home Portrait Graflex will make these pictures in the shade, and fast enough to prevent movement of the subject from blurring the negative.

Photography of this kind brings the photographer close to the people who will make his best customers. It will not detract from the business in the studio;



PROJECTION ROOM OF RESEARCH LABORATORY, COMPLETELY EQUIPPED WITH PROJECTION,
SPECTROSCOPIC AND PHOTOMICROGRAPHIC APPARATUS

on the contrary, it opens up the opportunity for making the more formal portraits under the skylight.

You can't pose children—but they will pose themselves, and the Home Portrait Graflex will get these despairingly attractive poses every time.

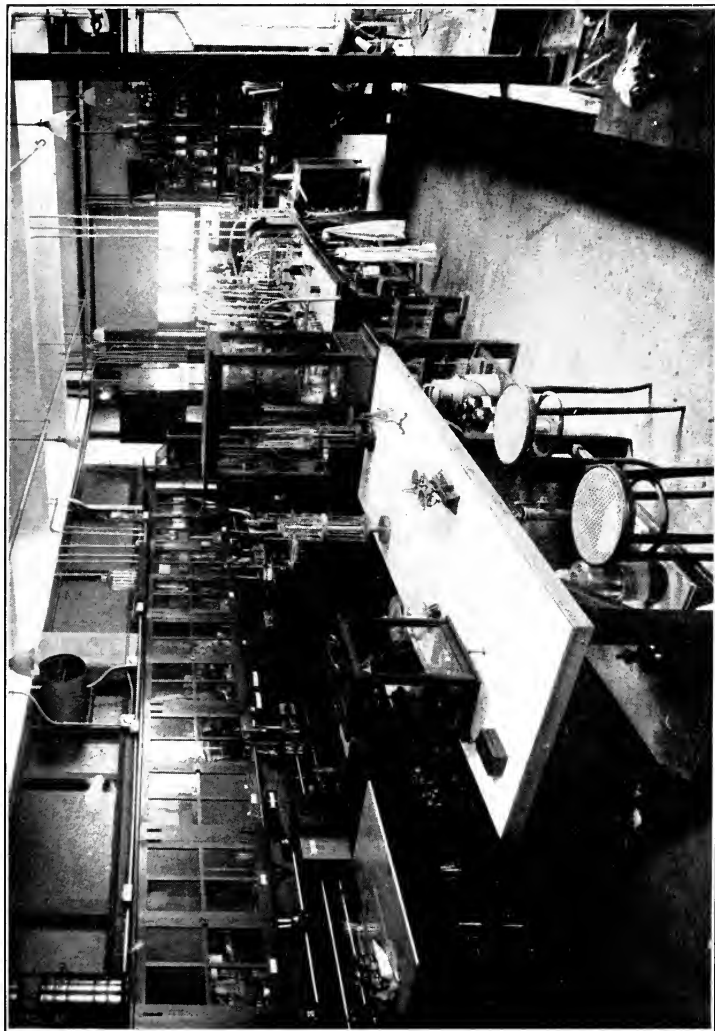
When the construction of the Graflex is considered, it is easy to understand why it accomplishes such satisfactory results.

An optically perfect mirror is fitted in the body of the camera, at an angle of 45 degrees to the axis of the lens. The image projected by the lens falls on this mirror and is reflected to a fine ground glass focusing screen in the top of the camera. A folding focusing hood is fitted to the top of the camera, and when looking down in this hood the image on the ground glass is seen right-side up, the full size of the negative. The mirror frame is hinged at the back, allowing the mirror to swing up out of the cone of light projected by the lens, when the exposure is made. When the mirror is down in position for focusing it prevents any light from reaching the plate or film, even though the holder slide is drawn. Upon pressing the release lever the mirror swings up out of the way, and at the same time releases the shutter. As the focusing screen in the top of the camera is in exact register with the sensitive

surface of the plate or film, the image recorded on the negative will be identical with that seen on the ground glass at the instant the exposure was made. The distance to the subject is immaterial, as the operator changes the focus as he views the image on the screen. The reflecting feature removes all uncertainty regarding focus, composition, or expression.

Built into, and part of, the Home Portrait Graflex, is the Graflex Focal Plane Shutter, operating at any speed from "time" to $\frac{1}{500}$ of a second. Except when making time exposures, this shutter allows more light to reach the plate during any given exposure than any other type of shutter.

The Home Portrait Graflex makes 5 x 7 negatives on plates, Portrait Film, roll film, or film packs. The back of the camera revolves from the horizontal to the vertical position, and the focusing screen shows the full-size image in either position. Another feature that makes the Home Portrait Graflex particularly valuable for portraiture is the tilting front adjustment. Upon turning a quick-acting screw on the front standard, the front of the camera moves either up or down, describing an arc. This corrects the false perspective frequently obtained in sitting figures or in groups where some of the subjects are placed in front of others. By means of this device it is pos-



ONE OF A NUMBER OF COMPLETELY EQUIPPED LABORATORY ROOMS OF THE
KODAK PARK RESEARCH LABORATORY

sible to obtain the exact degree of diffusion necessary to secure the best effects in the draperies.

Long-focus lenses mean better pictures. The Home Portrait Graflex takes the $9\frac{7}{8}$ -inch B. & L. Tessar, $f.4.5$, No. 17, or the $11\frac{7}{8}$ -inch No. 18. Either of these lenses produces a large image without approaching the subject too closely, and completely avoids the unpleasantly exaggerated perspective so noticeable in pictures made with short-focus lenses.

No camera excels the Home Portrait Graflex for child portraiture, either in the home or in the studio. For all outdoor work which does not require a shutter speed exceeding $\frac{1}{500}$ of a second, the Home Portrait Graflex will do all that any other camera will do, and more than most.



EASTMAN FOCUSING CAP

Is simply a sliding block containing an opening covered with ruby glass and another that is quite uncovered. Focus at once through the ruby glass aperture, with certainty and without risk of fog—then slide the uncovered aperture before the lens to make the exposure.

No. 1—For lens barrels $1\frac{1}{2}$ to $2\frac{1}{4}$ inches in diameter	\$.75
No. 2—For lens barrels $2\frac{1}{4}$ to 3 inches in diameter	1.00
No. 3—For lens barrels 3 to $3\frac{7}{8}$ inches in diameter	1.50

MILKY FIXING BATHS

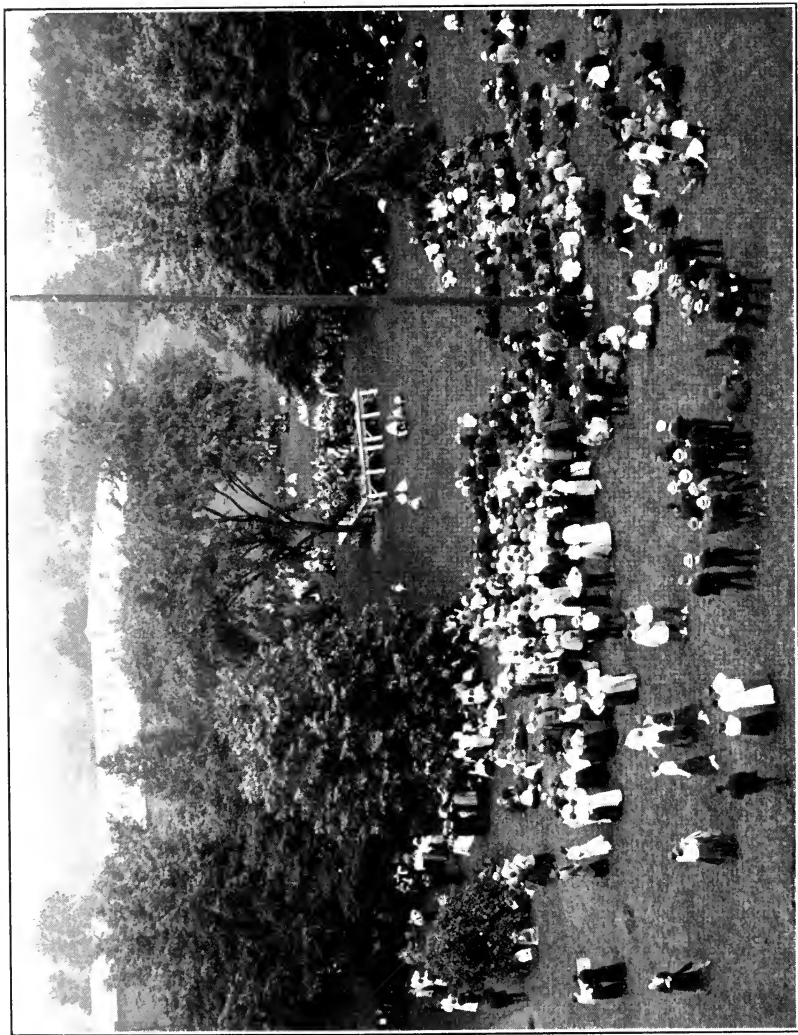
In advance of its season we give the measures that should be taken to overcome it.

The milkiness is an indication that the bath contains sulphur and the result is brown or yellow spots and sometimes a brown tone over the entire print.

Prints must be hardened, and alum is the best hardener, but alum in combination with Hypo will release sulphur which makes the trouble. Acetic Acid of proper strength, in combination with pure sulphite of soda, forms a gas which prevents this release of sulphur and forms a perfectly balanced fixing bath.

Impure sulphite containing sulphate, sulphite exposed to the air and becoming sulphate, acetic acid used too strong or in too great a quantity, or the addition of the hardener to the hypo solution before the hypo is thoroughly dissolved will release sulphur and cause trouble first mentioned. If the hypo bath becomes hot, the gas formed in the solution by the acetic acid and sulphite of soda will partly escape and allow the sulphur to be released.

Prints which have been fixed in a bath containing sulphur may not begin to discolor until they are laid out to dry so the only safe plan is to be sure of the fixing bath. Have a stock solution of hardener made of pure fresh



THE REGULAR THURSDAY NOON SUMMER BAND CONCERT GIVEN FOR
EMPLOYEES ON THE KODAK PARK LAWN

chemicals. Make a fresh fixing bath, use it while fresh, do not allow it to become warm and throw it away when your prints are fixed.



MORE LENSES NEEDED

The work of the Signal Corps—the work of equipping cameras for our great fleet of aeroplanes—the actual work of the boys who must fly over no-man's-land to bring back to Pershing photographic information on which depends the safety of our troops in the trenches—success or failure depends upon a continuous supply of lenses for this work.

Thousands of men are in training for this important service and many are ready to go. Others are already "over there," and their urgent need is equipment.

Thousands of lenses are needed at once by the Signal Corps and thousands of photographers must enlist their lenses promptly if this important department is to be properly equipped for its work in France.

The lenses must be had, and you have them—not every photographer, to be sure, for many have offered their lenses and these have been purchased. Some have even sent lenses asking the Signal Corps to set fair prices, but this cannot be done. This department can buy your lenses at the prices you ask if they are

in good condition, but it is important that you at once send a list of those you have—all anastigmats of from $8\frac{1}{2}$ to 24 inch focal length.

Address, Office of Chief Signal Officer, Signal Equipment No. 33, 119 D St., N. E., Washington, D. C. List all the anastigmat lenses you have, giving name, focal length, serial number and working aperture. The lenses most urgently needed will be purchased at once—the others will be card indexed and ordered in as needed.

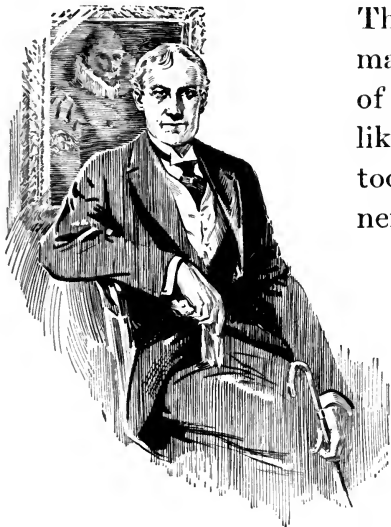
Don't hold off waiting for the other photographer to do his bit—your lens is needed at once and your patriotism may make him ashamed of his delay in answering the call.

Cameras are ready, aeroplanes are ready, men are ready. The manufacture of all equipment is being speeded up and thousands of lenses are needed where hundreds are being offered.

Where there has been congestion there is now order and every offer of lenses will be acted upon promptly. And for every lens you offer there is one on the market, almost if not equally suitable for your use.

You are not asked to give these lenses away—you *are* asked to sell them at a price that will be satisfactory to you and that will enable you to buy lenses to take their place.

Do your bit and do it *at once*.



The boy "over there" may have a portrait of Mother—but he'd like one of "Dad" too—send one in the next letter.

*Make
an appointment
to-day.*

THE PYRO STUDIO

Line cut No. 250. Price, 50 cents.

THE ONLY CONDITION

We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first*. C. K. CO., LTD.

Work-room necessities:

Eastman Double Coated Mounting Tape

A tough paper, one-half inch in width coated on both sides with a strong adhesive. Moisten one side and attach to the print—moisten the other side and attach to the mount—place under slight pressure until dry. In 100-foot rolls, 25 cents.

Eastman Ground Glass Substitute

Produces a fine ground glass surface for work on the backs of negatives or for other diffusing purposes. Flows evenly—dries quickly. 4 oz. bottle, 40 cents.

Nepera Waxing Solution

There are but few prints that will not be the better for an application of this solution—it adds so much brilliance, without shininess. 4 oz. bottle, 20 cents.

Eastman Opaque

A finely ground pigment in convenient paste form that is prepared quickly, flows smoothly and effectively stops out the light from a pin hole to an entire background.

Your stock-house can supply them.

Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.

ENLIST YOUR LENS IN THE U. S. ARMY

The people are asked to help the Signal Corps of the Army get lenses enough for cameras for the fleet of observation airplanes now being built. The need is immediate and of great importance. The lens is the eye of the Army.

The situation is that, American manufacturers are not yet in a position to meet the sudden demand for special lenses for aerial service. Possessors of the required types are, therefore, urged to do their bit by enlisting their lenses in the service of the Army. They are asked to immediately notify

Equipment Division

Care of Signal Equipment No. 33

119 D Street, N. E.

Washington, D. C.

of lenses of the following descriptions which they are willing to sell, stating price asked:

Tessar Anastigmat Lenses made by Carl Zeiss, Jena, Zeiss Tessar by Ross of London and Goerz Dogmar, of working apertures of F. 3.5 or F. 4.5, from $8\frac{1}{4}$ to 20 inch focal length.

Bausch & Lomb Zeiss Tessars, F. 4.5, from $8\frac{1}{2}$ to 20 inch focal length.

Voigtlander Heliar Anastigmat Lenses, F. 4.5, $8\frac{1}{4}$ to 24 inch focal length.

Practically all of the lenses of these and other foreign makes of anastigmats in America will be required, but the $8\frac{1}{4}$ inch lenses are most urgently needed, also a number of Bausch & Lomb Zeiss Protars VII A No. 13, preferably set in Volute shutters.

(It is requested that the press and individuals giving publicity to the above give the specifications of the lenses desired accurately. This will avoid the labor and delay of unnecessary correspondence with people offering lenses that are unsuitable.)

WANTED

DISCARDED NEGATIVES

We purchase discarded negatives of standard sizes from $4\frac{3}{4} \times 6\frac{1}{2}$ to 20×24 , providing same are in good condition and are carefully packed in accordance with our instructions.

We will pay all the freight on shipments of 100 lbs. or more, except from localities where the freight rate exceeds \$1.00 per 100 lbs., in which case the shipper will be required to pay the excess.

Before making any shipment please secure these instructions, prices and further particulars, which will be furnished on application.

Canadian Kodak Co., Limited,
Toronto, Canada

N. B.—Shipments should be directed to West Toronto.

Before the war
we recommended

TOZOL

*The Complete Developer for
Photographic Papers.*

It's the same to-day, is the best developer on the market for Artura, Azo and Velox papers, and your dealer can supply you.

The genuine is always better than the best substitute.

THE PRICE

1 oz. bottle	\$ 1.00
$\frac{1}{4}$ lb. bottle	4.00
$\frac{1}{2}$ lb. bottle	7.75
1 lb. bottle	15.00

Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.

Wratten Filters

Wratten K Filters used with orthochromatic plates enables the photographer to secure the greatest color correction the plates are capable of rendering.

Wratten K and Contrast Filters used with panchromatic plates enable one to secure partial correction, complete correction or over-correction of color values so that colored objects may be photographed lighter, darker or exactly as they appear to the eye.

Orthochromatic Filters

K1—Light yellow, for use when short exposures are necessary.

K2—Slightly darker, for the greatest correction on orthochromatic plates.

K3—For absolutely correct rendering on panchromatic plates, but not recommended for other plates.

Contrast Filters for Panchromatic Plates

G—Strong yellow, for rendering yellow objects lighter than they appear—especially suitable for showing grain of oak and yellow woods.

A—Orange-red, for mahogany, rosewood, etc.

B—Green, for typewriting, rugs, etc.

C—Deep red, for dark mahogany, etc.

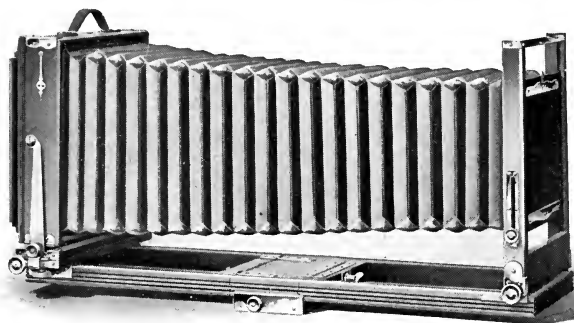
PRICES OF W. & W. FILTERS

	Gelatine Film Square	B Glass Circles or Squares		Gelatine Film Square	B Glass Circles or Squares
1 $\frac{1}{4}$ in. or less . . .	\$.20	\$1.15	2 $\frac{1}{4}$ in.	\$.50	
1 $\frac{1}{2}$ in. . . . .	.25	1.30	2 $\frac{1}{2}$ in. . . . .	.65	\$2.35
1 $\frac{3}{4}$ in. . . . .	.30	1.50	3 in. . . . .	.90	3.00
2 in. . . . .	.40	1.65	3 $\frac{1}{2}$ in.		4.50
2 $\frac{1}{8}$ in.		1.80	4 in.		5.40

Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.



EASTMAN VIEW No. 2

All our experience in view camera making, all the information that we have been able to collect, of the needs of the view-camera worker, have been put into the proposition of providing in this model a view-camera as near to perfection as human ingenuity can devise.

It is constructed with the idea of providing the greatest possible solidity and strength throughout, and has every fitting that is dictated by modern practice for quickness and certainty of use.

SPECIFICATIONS

Bellows: draw, 5 x 7, 23 in.; $6\frac{1}{2}$ x $8\frac{1}{2}$, $26\frac{1}{2}$ in.; 8 x 10, $29\frac{1}{2}$ in.; 7 x 11, 31 in. Weight: 5 x 7, 7 lbs.; $6\frac{1}{2}$ x $8\frac{1}{2}$, $10\frac{1}{2}$ lbs.; 8 x 10, $11\frac{1}{4}$ lbs.; 7 x 11, $15\frac{1}{2}$ lbs. Size of Lens Board: 5 x 7, $4\frac{1}{2}$ x $4\frac{1}{2}$ in.; $6\frac{1}{2}$ x $8\frac{1}{2}$, 6 x 6 in.; 8 x 10, 6 x 6 in.; 7 x 11, $6\frac{5}{8}$ x $3\frac{7}{8}$.

Carrying Case, Canvas, combination style, with compartments for camera, holders and tripod. All operating nuts on the right side, binding nuts on the left hand side.

PRICES

Eastman View No. 2,	5 x 7	$6\frac{1}{2}$ x $8\frac{1}{2}$	8 x 10	7 x 11
with Case and Holder	\$40.00	\$43.00	\$45.00	\$50.00

Canadian Kodak Co., Limited,
Toronto, Canada.

For the retoucher

The Eastman Etching Knife

Specially designed for retouchers, its blade has two broad cutting edges with just enough curve to prevent digging, yet flat enough to give all the cutting surface needed. The knife is $5\frac{3}{4}$ inches long and is enclosed in a stopping case—the price is \$1.00.

Eastman Retouching Fluid

This fluid, or “dope,” gives an especially fine tooth for the retouching pencil and allows a great amount of lead to be used when desired. Suitable for either soft or hard pencils. One ounce bottle, 25 cents.

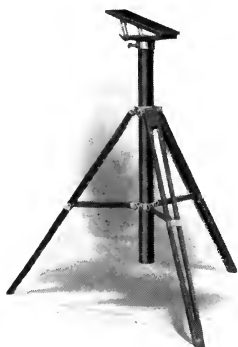
Eastman Non-Inflammable Retouching Varnish

flows easily and dries almost instantly, affording a fine and even tooth for the retouching lead. It will not remove the most delicate penciling and is an excellent protection for the negative.

Your stock-house can supply them.

Canadian Kodak Co., Limited,
Toronto, Canada.

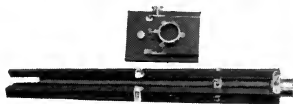
The F. & S. COLLAPSIBLE STAND



This stand is light, rigid and compact. It weighs but six pounds, and, when folded, is 37½ inches long.

The felt-covered tilting top measures 6¾ x 9½ inches, and may be revolved or tilted to any position. The top is fitted with a standard tripod screw, and is amply large to afford a firm support for the camera. The top may be lowered to within 33 ins. or elevated to 47 ins. from the floor.

Metal work is nickel and aluminum. The wood work is in mahogany finish.



F. & S. Collapsible Stand, complete, \$12.00

FOLMER & SCHWING DEPARTMENT
EASTMAN KODAK CO. ROCHESTER, N. Y.

Style Pendleton

Feature this Folder for Your Slip-in Corner Prints.



*Made in Two Colors,
Grey and Brown.
For 4 x 6 Square Prints Only.*

The Pendleton is a very attractive corner holder style for your best grade 4 x 6 square prints. The Inserts and Covers are rare combinations of beautiful color contrasts, and tinting on insert, and embossing gives an effect of double insert mounting. Cover is of rich fabric finish and very attractive crest. The Pendleton has quality and style.

SAMPLE MAILED FREE

MANUFACTURED BY

Canadian Card Co., Toronto, Canada.

PHOTOGRAPHIC MOUNTS
MADE IN CANADA

Get the enlargement business.
If contact prints will sell

ARTURA CARBON BLACK

enlargements with contact print
quality will also sell. You can
duplicate the surface, tone and
texture, as well as the quality
of the contact print on Artura
Carbon Black.



CANADIAN KODAK CO.,
LIMITED,
TORONTO, CANADA.

All Dealers'.



"THEY'VE THROWN ME DOWN! I CAN'T GO TO FRANCE!"

*The Lejaren à Hiller Studios
Courtesy of Judge*



STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

ESTABLISHED 1906

VOL. 10

APRIL 1918

No. 2

THE PRINTING ROOM

Observation shows that, in a large number of studios, an undue share of the burden of the business is borne by the operating department. In other words, it is the successful posing, the successful negative making, and the successful handling of the customer in the reception room and studio that keeps the business together. Not often enough, by any means, is a negative made to give its best results, notwithstanding that it is the print that represents the work of the studio, and that the print is the only thing the customer sees.

It is not always the fault of the printing room hands, however. Too frequently the papers used are not of high quality, and if, in addition, there is the slightest want of ability in the use of

them, the result is a foregone conclusion. The only sound policy is to bear in mind that the better your negatives the better the paper they deserve to be printed upon; and the poorer the negatives the greater the necessity of a high-class paper capable of improving the results.

By general consent, Artura has advanced the quality of the work turned out by every studio in which it has been adopted. The public like it. To them, portraits on Artura are distinctive, and they order accordingly. They are drawn by the excellent modeling seen in an Artura print. They appreciate its beautiful shadows and delicate high lights. Its rich, warm tone appeals to their fancy. Artura then is essentially the paper for the professional who wishes his prints to be the key to further patronage.



HOW TO SEND YOUR LENSES TO THE U. S. SIGNAL CORPS

It has come to our attention that some photographers have sent lenses to the Signal Corps in Washington and because the proper procedure has not been followed there has been some difficulty in straightening out the tangles that have been the result.

The Signal Corps is in need of lenses—in urgent need of them—but it is necessary for the department in charge of this work to have a description of lenses the photographer is willing to sell for the different needs of the Signal Corps work.

If you have a lens of the type and make for which the Signal Corps has advertised, write the department giving a full description of same—the make, type, size, focal length, speed, etc. Also state definitely the price at which you are willing to sell the lens outright.

If the lens is suitable for the work and the price satisfactory the department will mail you a properly numbered requisition for same which will identify your lens when same is shipped to Washington, properly numbered as per your requisition or voucher.

We would suggest that under no circumstances should you send a lens to the Signal Corps or turn it over to any agent of the Gov-

ernment without a properly numbered requisition.

Many lenses were sent to the Signal Corps without being requisitioned but all these lenses have either been purchased or returned to their owners. The tangles have all been straightened out and your offer of lenses will be promptly attended to and your lenses called in if required. List your lenses at once for army service.



THE CARE OF LENSES

Commenting on the proper care of lenses and their frequent abuse through lack of knowledge, the editor of the *British Journal* remarks: "There is nothing in which photographers differ so widely as in the way they treat their lenses, some regarding them as almost too precious to be handled, while others treat them with less respect than the carpenter awards his hammer."

He also adds that a lens should not be cleaned more often than is absolutely necessary; but it should never be used if there is the slightest veil of smokiness upon the surface.

The right way to clean a lens is to use a fine cambric rag moistened with pure rectified spirit.

Methylated spirit will not do as it is apt to leave a slight oily deposit upon the surface. The spirit should not be dropped upon

the lens but upon the cloth, as in the former case there is always a danger of loosening the black around the lens cells and causing smears.

Avoid giving the lenses anything in the nature of a blow or a jar. It has often happened that a blow which has left hardly a mark upon the brass work has put a stress upon one of the glasses which has seriously affected the definition.

Likewise it may be well to note that whatever may appear to be a bad fracture of the glasses may be due only to the balsam having given way. We have known of lenses in this state having been laid aside as useless, when a small outlay for re-cementing would have restored them to usefulness.



PLATE PRICES

The persistent advances in the cost of raw materials compelled us to advance the prices of our dry plates as at April 1st, 1918, the last preceding increase having been made on July 15th, 1915. Your stock house will be glad to give you the latest quotations on these goods.

While we are on the subject, we think it opportune to draw your attention to the advertisement for discarded negatives that has been running for months in *STUDIO LIGHT*. We need them.

NEW AZO PRICES

Overleaf is a new list of prices on Azo in single and double weights as well as Post Cards. This new schedule of prices went into effect Saturday, April 6th.

STUDIO LIGHT for August, 1917, contained an article on page 3, entitled "War Prices," which set forth clearly the way we regarded the raising of prices and the article is worth re-reading.

Azo prices have been raised of necessity. You need no one to inform you as to the prices current for the commodities you use daily outside of your Studio and it is plain to see that such advance must make the cost of labour higher. Food and clothing, for example, are necessary to all of us and the man who depends on his day's pay for a living had to have higher pay in order to cope with the upward trend of all commodities.

Higher labour cost is an important factor but not the only one to contend with. Consider and compare the market price of silver as it is given in the papers to-day with the corresponding figures two years ago or less. Remember, too, that silver is but one of the raw materials—none of the others have shown a downward trend.

We repeat—the new Azo prices arise out of necessity.



NEW AZO PRICE LIST

EFFECTIVE APRIL 8th, 1918

SINGLE WEIGHT

DOUBLE WEIGHT

1 Doz.	2 Doz.	$\frac{1}{2}$ Gro.	Gross	SIZE	1 Doz.	2 Doz.	$\frac{1}{2}$ Gro.	Gross
.....	\$0.18	.....	\$0.95	..... 1 $\frac{1}{8}$ x 2 $\frac{1}{2}$ .....	.....	\$0.25	.....	\$1.20
.....	.18	.....	.95	..... 2 $\frac{1}{4}$ x 2 $\frac{1}{4}$ .....	.....	.25	.....	1.20
.....	.18	.....	.95	..... 2 $\frac{1}{4}$ x 3 $\frac{1}{4}$ .....	.....	.25	.....	1.20
.....	.18	.....	.95	..... 2 $\frac{1}{4}$ x 3 $\frac{1}{2}$ .....	.....	.25	.....	1.20
.....	.22	.....	1.15	..... 2 $\frac{1}{2}$ x 4 $\frac{1}{4}$ .....	.....	.30	.....	1.45
.....	.22	.....	1.15	..... 3 x 4 .....	.....	.30	.....	1.45
.....	.25	.....	1.15	..... 3 $\frac{1}{2}$ x 3 $\frac{1}{2}$ .....	.....	.35	.....	1.45
.....	.25	.....	1.15	..... 3 $\frac{1}{2}$ x 4 $\frac{1}{4}$ .....	.....	.35	.....	1.45
.....	.28	.....	1.25	..... 2 $\frac{3}{8}$ x 4 $\frac{7}{8}$ .....	.....	.38	.....	1.55
.....	.28	.....	1.25	..... 2 $\frac{1}{4}$ x 7 .....	.....	.38	.....	1.55
.....	.28	.....	1.25	..... 3 $\frac{1}{4}$ x 5 $\frac{1}{2}$ .....	.....	.38	.....	1.55
.....	.35	.....	1.25	..... 3 $\frac{1}{4}$ x 6 .....	.....	.45	.....	1.55
.....	.35	.....	1.25	..... 4 x 5 .....	.....	.45	.....	1.55
.....	\$0.18	.....	1.25	..... 3 $\frac{3}{8}$ x 6 $\frac{1}{2}$ .....	.....	\$0.25	.....	1.55
.....	.18	.....	1.25	..... 3 $\frac{3}{8}$ x 5 $\frac{1}{2}$ .....	.....	.22	.....	1.55
.....	.18	.....	1.25	..... 3 $\frac{3}{8}$ x 5 $\frac{7}{8}$ .....	.....	.22	.....	1.55
.....	.18	.....	1.25	..... 4 x 6 .....	.....	.22	.....	1.55
.....	.20	.....	1.70	..... 4 $\frac{1}{4}$ x 6 $\frac{1}{2}$ .....	.....	.25	.....	2.15
.....	.25	.....	2.00	..... 4 $\frac{3}{4}$ x 6 $\frac{1}{2}$ .....	.....	.35	.....	2.50
.....	.25	.....	\$1.20	..... 5 x 7 .....	.....	.35	.....	\$1.50
.....	.35	.....	1.40	..... 5 x 8 .....	.....	.45	.....	1.75
.....	.35	.....	1.40	..... 3 $\frac{1}{2}$ x 12 .....	.....	.45	.....	1.75
.....	.35	.....	1.40	..... 5 $\frac{1}{2}$ x 7 $\frac{3}{4}$ .....	.....	.45	.....	1.75
.....	.35	.....	1.75	..... 6 x 8 .....	.....	.45	.....	2.20
.....	.40	.....	1.95	..... 6 $\frac{1}{2}$ x 8 $\frac{1}{2}$ .....	.....	.50	.....	2.45
.....	.45	.....	2.10	..... 7 x 9 .....	.....	.55	.....	2.65
.....	.50	.....	2.45	..... 7 $\frac{1}{2}$ x 9 $\frac{1}{2}$ .....	.....	.65	.....	3.05
.....	.50	.....	2.75	..... 7 x 11 .....	.....	.65	.....	3.45
.....	.50	.....	2.75	..... 8 x 10 .....	.....	.65	.....	3.45
.....	.65	.....	3.65	..... 9 x 11 .....	.....	.80	.....	4.55
.....	.75	.....	4.50	..... 10 x 12 .....	.....	.95	.....	5.65
.....	1.00	.....	5.50	..... 11 x 14 .....	.....	1.25	.....	6.90
.....	1.50	.....	8.25	..... 14 x 17 .....	.....	1.90	.....	10.30
.....	2.00	.....	11.40	..... 16 x 20 .....	.....	2.50	.....	14.25
.....	2.50	.....	14.45	..... 18 x 22 .....	.....	3.15	.....	18.05
.....	3.00	.....	17.20	..... 20 x 24 .....	.....	3.75	.....	21.50
.....	.....	.....	1.40	..... Stereo Die Cut .....	.....	.....	.....	39.05

ROLLS

SINGLE WEIGHT
20 Inches 40 InchesDOUBLE WEIGHT
20 Inches 40 Inches

\$1.00	\$2.00	..... 10 feet	\$1.25	\$2.50
3.00	6.00	..... 10 yards	3.75	7.50

ROLLS FOR CIRKUT CAMERA NEGATIVES

SINGLE WEIGHT

DOUBLE WEIGHT

5 in.	6 in.	6½ in.	8 in.	10 in.	16 in.		5 in.	6 in.	6½ in.	8 in.	10 in.	16 in.
\$0.65	\$0.75	\$0.85	\$0.95	\$1.20	\$1.90	.. 25 feet ..	\$0.85	\$0.95	\$1.00	\$1.15	\$1.45	\$2.25
1.25	1.50	1.65	1.90	2.40	3.75	.. 50 feet ..	1.65	1.90	2.00	2.25	2.90	4.50
2.50	3.00	3.25	3.75	4.75	7.50	.. 100 feet ..	3.25	3.75	4.00	4.50	5.75	9.00

AZO POST CARDS

1 Doz.	2 Doz.	$\frac{1}{2}$ Gro.	Gross	500
\$0.20	\$0.35	\$0.95	\$1.70	\$4.40



*The Lejaren à Hiller Studios
Courtesy of Harbor's Bazar*

THE FAMILY ALBUM

Family ties have been rendered tighter by the stress and strain of the great War, a fact which photographers have been brought to appreciate more fully than most people, because they have had to meet the demand for soldiers' pictures, which after all is founded chiefly on the sentiment of family.

To revive the vogue of albums would be of continuing benefit to every photographer, and the popularity of folder mounts lends a good deal of help towards accomplishing the revival, because prints placed in folders by mere tipping with paste are easily removed for mounting in the album, a far easier thing to do than to place solid-mounted prints.

Then modern methods of copying and reproducing render it easy to get older photographs copied so as to fit in with the more modern pictures in the album.

The present-day photographer has a decided advantage in having had an album devised especially for the purpose, that overcomes the objections to the old style family album, and which will hold almost every size of portrait made by the modern studio.

He has the added advantage of a great amount of general publicity that has been given this album in an extensive advertising campaign.

With such advantages, with a good profit on the album itself and with the stimulation of business that will undoubtedly result from the return to a more general use of the family album, there is every reason for the photographer putting forth his best efforts to reinstate the family album in every home. Write your dealer about the Eastman Portrait Album shown on page 28 of this number.



NEW MOUNTS

The Canadian Card Co. is using this month page 32 to rouse your interest in the 1918 catalogue they have sent you.

Make certain the salesman shows you the line.



THE WORK OF THE LEJAREN À HILLER STUDIOS

That photography is not lagging in artistic progress is indicated by the accompanying examples of what amounts to an entirely new field in picture-making, to wit: Photographic Illustration.

Heretofore this ground has been covered exclusively by artists of the brush, pen, charcoal, etc. But within the past few years a new note has crept into this department of the magazines. The *Saturday Evening Post*,



"I MEAN," HE EXPLAINED, "THAT I AM SURPRISED TO SEE AN ABLE
GIRL SUCH A FOOL AS TO MARRY JASON"

The Lejaren à Hiller Studios
Courtesy of Saturday Evening Post



Harper's Bazar, *Hearst's*, *McClure's*, *Cosmopolitan*, *American*—almost without exception the critical magazine editors have cast aside their latent or rampant prejudices against photographs as opposed to artists' drawings and are using them with avidity. At first the people were puzzled. These unusual pictures, which seemed to combine so many of the qualities of the drawn or painted picture with what is most artistic in photographic effects, could they really be photographs? They went so much further than seemed possible for the camera to go. The author's characters were there to the life—far more real and often a lot more like them than in drawings; their actions, emotions, the time and place, indoors or out, the furniture, clothes, down to details of bric-a-brac described by the author, were all vividly there. By degrees, of course, the facts are becoming known, and the camera is coming in for its full share of credit. Invariably these pictures bear the rather cryptic signature: *Lejaren à H.*, which represents *Lejaren A Hiller*, who is the originator of the idea. At present the work is the collaboration of two artists, Mr. Hiller and Mr. Henry Guy Fangel, both erstwhile illustrators of the pencil and brush persuasion. In fact they will tell you frankly that without such previous experience as "regular" illustrators they

would not be able to do with the camera what they accomplish today. And it is readily believable. The types, gestures, composition, light and shade, etc., in all their pictures reveal the touch of the trained illustrator. But it seems to us to require even more than that, it must need expert stage direction to tell in one picture what in the movies and on the stage can be allowed a series of actions. The crucial moment must be caught and held. The expressions and gestures of the models, sometimes expressions of great intensity, well rehearsed, their allotted positions entirely understood, down to a fold sometimes in a dress. Perfect teamwork must coincide with the snap of the shutter.

Naturally, the illustration by photography of fiction with a wide range of subjects calls for many models. Where a pen and ink artist may do a whole year's work from three or four models, and a painter who specializes in covers may work with only one, the photographers have laboriously collected and card-indexed models running into hundreds. The outsider would be apt to think that most of these would be movie actors, but in fact only a comparatively small percentage are drawn from this class.

"If a movie-actress can do work suitable to our purposes," said Mr. Fangel, "it is apt to be by accident. Our work is so much



"DON'T LOOK AT ME THAT WAY, BUD, I KNOW PERFECTLY
WELL WHAT I'M ABOUT"

*The Lejaren à Hiller Studios
Courtesy of Hearst's Magazine*



more refined, our details must be so much more carefully done, than in the movies, where rough general effects are required, that the two have very little similarity, and a face which may take well in the movies does not necessarily produce results for us."

Some of the best known actors and actresses on the speaking stage, as well as those from the pictures, are on the list, along with many artists' models, many working girls and men of various employments who like to make a little extra money in spare moments, and a good number—a rather surprisingly large number—of women who do it largely for diversion, or pocket money, or a desire to be doing something they have a talent for. This last type is sometimes used in "society" scenes where good clothes and obvious good breeding are essential. Some of these women find convenient use for the money that is paid them, though they may be well to do.

The two "illustrating photographers" employ a scout who is sent out to the location where suitable models for the character required may be found, but most of the new models—and the large list is receiving constant increments—come through the good offices of those who have already posed and who spread the word that it is easy money for pleasant work. When a story deals with east side or rural types or some

other specialized characters, the scout's duty is to find the nearest actual people for the parts, without depending on make-up. It is this that makes for greater realism than is usually found on the stage.

To quote the *New York Times* critic, "It may be all in the fact that experienced artists are working with the camera, as Mr. Fangel says. But to an outsider it seems to be in part at least due to the fact that these two artists also happen to be pretty good stage directors."



\$3,000.00 IN CASH

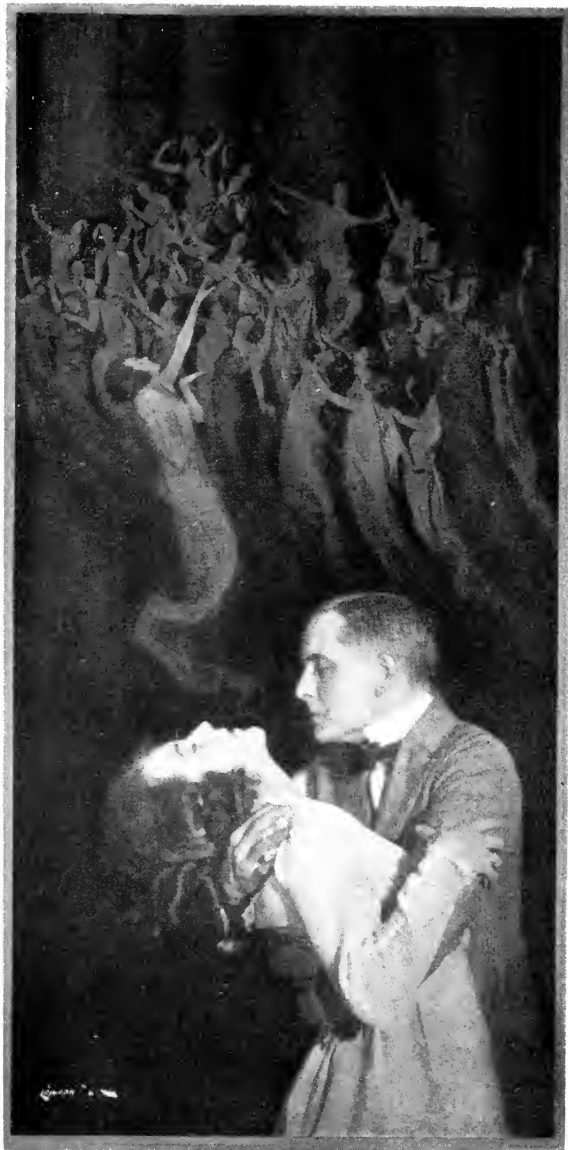
OFFERED IN THE 1918

KODAK ADVERTISING COMPETITION

This is a competition in which pictures with advertising quality will win. We want good photographs, but the most perfect photograph may be the one with the least advertising value.

Just so sure as you look at the right kind of an advertising picture—even glance at it—that picture has delivered its selling message, for the point of a picture gets over instantly.

And then just so sure as your eye is caught by the illustration, there is a precious second in which you say to yourself "I'd like to do that," or "That looks like fun," and, without conscious



"CONSCIENCE"

*The Lejaren à Hiller Studios
Courtesy of Hearst's Magazine*



effort on your part, you are reading the lines of type below.

The right kind of an advertising picture does all the work. It stops the eye, arouses the interest and, supplemented by the text, drives home the story.

We want pictures of the right kind to use in our magazine advertising—pictures that will make people enthusiastic over Kodaking, that will impress them with the pleasure of photography, that will convince them of the fact that Kodak took the bother out of picture making long ago. In short, we want pictures that will sell Kodaks.

Such pictures are worth real money—the prize awards of the 1918 Advertising Competition make fourteen of them worth three thousand dollars.

In this competition, recognized professional photographers, including commercial and newspaper photographers, in short all persons depending upon the use of a camera for a livelihood, will compete in Class A. Class B is open to amateurs only.

Each picture is to contain a figure or figures and is to be suitable for use as an illustration in advertising the Kodak or Kodak system of amateur photography.

Each print in Class A must be from a negative 5 x 7 or larger. As pictures are often reproduced in large sizes in our advertising, large pictures will be given preference *everything else being equal*.

The winner of a first prize shall be awarded no other prizes and no competitor shall be awarded more than two prizes. A competitor, however, may enter as many pictures as he desires and at any time before the close of the contest, Nov. 1st, 1918.

THE PRIZES

Class A—Professional Photographers only:

First Prize . . .	\$600.00
Second Prize . .	400.00
Third Prize . . .	200.00
Fourth Prize . . .	200.00
Fifth Prize . . .	200.00
Sixth Prize . . .	200.00
Seventh Prize . .	200.00

Full particulars of the contest and rules governing same may be had from your dealer or will be mailed on request.



MORE BUSINESS FOR YOU

Pershing has asked that the families and friends of the soldiers in France send them fewer of the things they can buy in the Army canteens at cost and more letters and news from home. And we know of no better or more welcome news than pictures.

The home folks were mighty anxious to have pictures of the soldiers, but now that they are gone, the fact that the soldier also wants pictures of the home folks needs exploiting.



The Lejaren à Hiller Studios



Just to remind a few million of these same home folks of this fact we are using a full page in the April number of *The Ladies' Home Journal*. The circulation is over a million and a half, but several times that number read the magazine, and they are the class of people who are able to buy photographs.

A miniature reproduction of the advertisement is shown on this page. It is the kind of display that can not be overlooked, it is the kind of copy that will make one stop and think, and it will make business for you.

You can make it especially good copy for *your* studio by using the same copy in your local papers and in your display case. Don't be afraid of repetition. That same ad. in any size with the same proportion of type to white space will attract attention to your signature at the bottom.

We know from experience that this advertisement will influence a great many people to have photographs made. It's up to you to let them know that you are "the photographer in your town."



MAKE THE APPRENTICE EFFICIENT

Unfortunately there has been no general or uniform system of apprenticeship in the photographic profession in this country, and as the needs of the army have materially depleted the ranks of photographic workers, the demand for assistants has been greater than the supply.

Trained help is hard to find because there has been very little method used in training assistants. The boy who leaves school

For your Soldier Boy in camp or at the front; for your Sailor Lad patrolling the high seas; from you to him to make his heart light and to help keep tight the home ties—
your photograph.

There's a photographer in your town.
Eastman Kodak Co., Rochester, N. Y.



The Lejaren à Hiller Studios
Courtesy of Harper's Bazar



and takes a position in a photographic studio too often sees no opportunity for advancement, drops out, and another boy takes his place.

The result is a serious shortage of help, and in many cases a limited output of work. If inefficient help is given the place of experienced workers and studios kept going at full capacity, the result is often a waste of material out of all proportion to production or a finished product that is not up to a standard.

It would be a decided economy for a photographer to devote a certain amount of time and material and patience to the training of assistants. The things that are obvious to the man of experience are far from obvious to the beginner. And the things you can teach a boy in a few carefully thought-out lessons would take him as many months to learn by absorbing the knowledge, as he is usually expected to do.

One of the important positions in a studio that must either be filled by an apprentice or the photographer himself compelled to do the work, is that of the dark-room man. It isn't good business for the photographer to do this work himself so long as he can employ his time to better advantage.

Developing is important work, but not as difficult as the photographer who does his own work often imagines. Faults of light-

ing can be partially corrected by after-treatment of the negative, but they can't be corrected in developing. The apprentice can be taught to develop correctly, with a little patient training, and every plate that the photographer exposes should be developed correctly.

The place to correct mistakes is under the skylight, and the time, before the exposure is made, or while it is being made, if the photographer is prone to under or over-expose. The fact that the operator is not developing his own plates will make him more careful. He will try to make them require less after-treatment, and this is as it should be.

The best method of training an apprentice quickly involves some little care and trouble at the time, but will save much trouble later on. He should be given a practical lesson in compounding a developer. He should have it explained to him, for instance, that there are four essential ingredients: the developer or reducer, the accelerator which hastens the action of development, the preservative, and the solvent, water.

And it should be further explained that the reducing agent may be one of a number, pyro being most commonly used. The accelerator is the alkali and is usually carbonate of soda. It opens the pores of the gelatine



"THE MAIDENS OF EUROPE SPEAK"

The Lejaren à Hiller Studios
Courtesy of Hearst's Magazine



and permits the reducer to seek out the particles of silver that have been exposed to light and reduce or blacken them by oxidation. The preservative is usually sulphite of soda, which prevents a too rapid oxidation of the developing agent and so affects the color of the negative.

The importance of combining chemicals in the order given in formulas to insure proper chemical action should be impressed upon the pupil. All of the little things that are so obvious to the photographer of experience but not obvious to the apprentice should be carefully explained.

Actual development is best taught by experience, but the experience that would ordinarily be gained in several months or a year may be crowded into one or two lessons with very little expense in the teaching. Explain, for example, that while the silver in the emulsion is exposed only on the surface in the shadows, slightly deeper in the half-tones and quite deep in the highlights, development is fairly even over the plate to begin with. But as it proceeds, the highlights gain in density up to the point when the full range of contrast is secured and development is complete.

To explain this best you should make two slightly under-exposures exactly alike, one proper exposure and two over-exposures exactly alike. Have the appren-

tice develop one under, one correct and one over-exposure in the same tray or in a tank for the time for correct development. The result will be three negatives of different densities, but the contrasts in the three will be very much the same. Your pupil won't grasp this at once, but when you have your printer make a print from each of these of the same depth, the three prints will be alike. This will show that a negative must be fully developed to produce proper contrast.

Now show your pupil how to develop the two remaining plates to as nearly the same density as possible. Begin with the under-exposure, and when it is fully developed place the over-exposure in the same tray and stop development when the density of the two is as nearly the same as you can judge by inspection.

The negatives will look very much alike, but when prints are made the prints will show the difference in contrast, due to the over-development of the under-exposure and the under-development of the over-exposure.

This practical lesson will teach the apprentice that full development of exposures is necessary to secure negatives of correct and uniform contrasts. It can then be explained that the fully developed negative, if too dense, can readily be reduced for convenience in printing.

Another important lesson can



"AS LAURENCE LISTENED SHE COULD HAVE WRUNG THEIR NECKS"

The Lejaren à Hiller Studios
Courtesy of Hearst's Magazine



be given on the proper strength of the developer and the proper temperature. Make six correct exposures on as many plates. We will assume that five minutes is your standard time for tray development. Have your pupil develop the first plate for five minutes in a developer one-fourth normal strength, the second plate for five minutes in normal strength developer, and the third plate for five minutes in the concentrated stock solution to which no water has been added.

The negatives will show the results of under and over-development and the importance of proper strength of developer for the best results. It can also be explained that the properly exposed but under-developed negative can be successfully intensified because it contains full detail, while an under-exposed negative can not be materially benefited by intensification because it does not contain the necessary detail.

We think the next lesson is most important because too little attention is often given to temperature of solutions and the important relation temperature bears to good results. The first of the remaining three negatives should be developed for five minutes in normal developer at a temperature of 50° F., the second for five minutes at 65° F., and the third for five minutes at 75° F. Whether the tray or tank

method is used in your work the temperature of the solution is of such great importance in the quality of results and their uniformity, that you should impress this point firmly on the mind of the apprentice, and yourself as well if you have grown careless.

As temperatures drop below normal the quality of results also drops and the negatives developed at the low temperature will be decidedly weak and lacking in contrast and brilliancy. The reverse will be found with the negative developed at the high temperature. The negative will be hard and contrasty and a poor printer.

With such practical instruction and a little coaching you can, in a very short time, make a good dark-room man of an assistant who might otherwise spend months in picking up the information in small bits. You will also find that the interest you have taken in the boy will be more than offset by the interest he will take in his work if he has any ambition to learn. If you find he is not apt in learning, you can be rid of him much sooner and find more suitable material to develop.



Make the print on

ARTURA

Pictures of home
folks inspire our Sol-
diers of Democracy
with the courage
that wins.

Your photograph
for your soldier.

There's a photographer in your town.

THE P. Y. RO STUDIO

ENLIST YOUR LENS IN THE U. S. ARMY

The people are asked to help the Signal Corps of the Army get lenses enough for cameras for the fleet of observation airplanes now being built. The need is immediate and of great importance. The lens is the eye of the Army.

The situation is that, American manufacturers are not yet in a position to meet the sudden demand for special lenses for aerial service. Possessors of the required types are, therefore, urged to do their bit by enlisting their lenses in the service of the Army. They are asked to immediately notify

Equipment Division

Care of Signal Equipment No. 33

119 D Street, N. E.

Washington, D. C.

of lenses of the following descriptions which they are willing to sell, stating price asked:

Tessar Anastigmat Lenses made by Carl Zeiss, Jena, Zeiss Tessar by Ross of London and Goerz Dogmar, of working apertures of F. 3.5 or F. 4.5, from $8\frac{1}{4}$ to 20 inch focal length.

Bausch & Lomb Zeiss Tessars, F. 4.5, from $8\frac{1}{2}$ to 20 inch focal length.

Voigtlander Heliar Anastigmat Lenses, F. 4.5, $8\frac{1}{4}$ to 24 inch focal length.

Practically all of the lenses of these and other foreign makes of anastigmats in America will be required, but the $8\frac{1}{4}$ inch lenses are most urgently needed, also a number of Bausch & Lomb Zeiss Protars VII A No. 13, preferably set in Volute shutters.

(It is requested that the press and individuals giving publicity to the above give the specifications of the lenses desired accurately. This will avoid the labor and delay of unnecessary correspondence with people offering lenses that are unsuitable.)

WANTED

DISCARDED NEGATIVES

We purchase discarded negatives of standard sizes from $4\frac{3}{4} \times 6\frac{1}{2}$ to 20×24 , providing same are in good condition and are carefully packed in accordance with our instructions.

We will pay all the freight on shipments of 100 lbs. or more, except from localities where the freight rate exceeds \$1.00 per 100 lbs., in which case the shipper will be required to pay the excess.

Before making any shipment please secure these instructions, prices and further particulars, which will be furnished on application.

Canadian Kodak Co., Limited,

Toronto, Canada

Address shipments to West Toronto.

Before the war
we recommended

TOZOL

*The Complete Developer for
Photographic Papers.*

It's the same to-day, is the best developer on the market for Artura, Azo and Velox papers, and your dealer can supply you.

The genuine is always better than the best substitute.

THE PRICE

1 oz. bottle	\$ 1.10
$\frac{1}{4}$ lb. bottle	4.00
$\frac{1}{2}$ lb. bottle	7.75
1 lb. bottle	15.00

Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.

Seven by Eleven

*A new sized picture with
big commercial possibilities*



Eastman View Camera No. 2

7 x 11

For either vertical or horizontal subjects, the proportions of the 7x11 picture are better than those of the 8x10. Especially suitable for groups, architectural subjects and landscapes. The pictures look larger and sell better, yet the material costs no more.

The 7x11 Eastman View Camera No. 2 has a swing of unusual latitude, a $6\frac{1}{4} \times 13\frac{1}{2}$ front board and a sliding arrangement which permits the lens to be centered on either half of the film or plate when making two exposures on a 7x11. This camera is an improved model of the Empire State and Century View and embodies every practical convenience.

THE PRICE

Eastman View Camera No. 2, 7x11, with
case and one Plate Holder . . . \$55.00

Canadian Kodak Co., Limited,
Toronto, Canada.

All Dealers'.

How do you care for portraits in *your* home?
Sell yourself a portrait album and you will have
no trouble in selling your customers.



EASTMAN PORTRAIT ALBUMS

in the homes of your patrons will increase your business by stimulating the interchange of photographs. An album that will hold forty-eight photographs will create a demand for forty-eight portraits to fill it.

The way to sell albums is to have them in stock, show them and explain their practical usefulness. Eastman Portrait Albums are adaptable to 87% of the sizes of portraits now made by photographers.

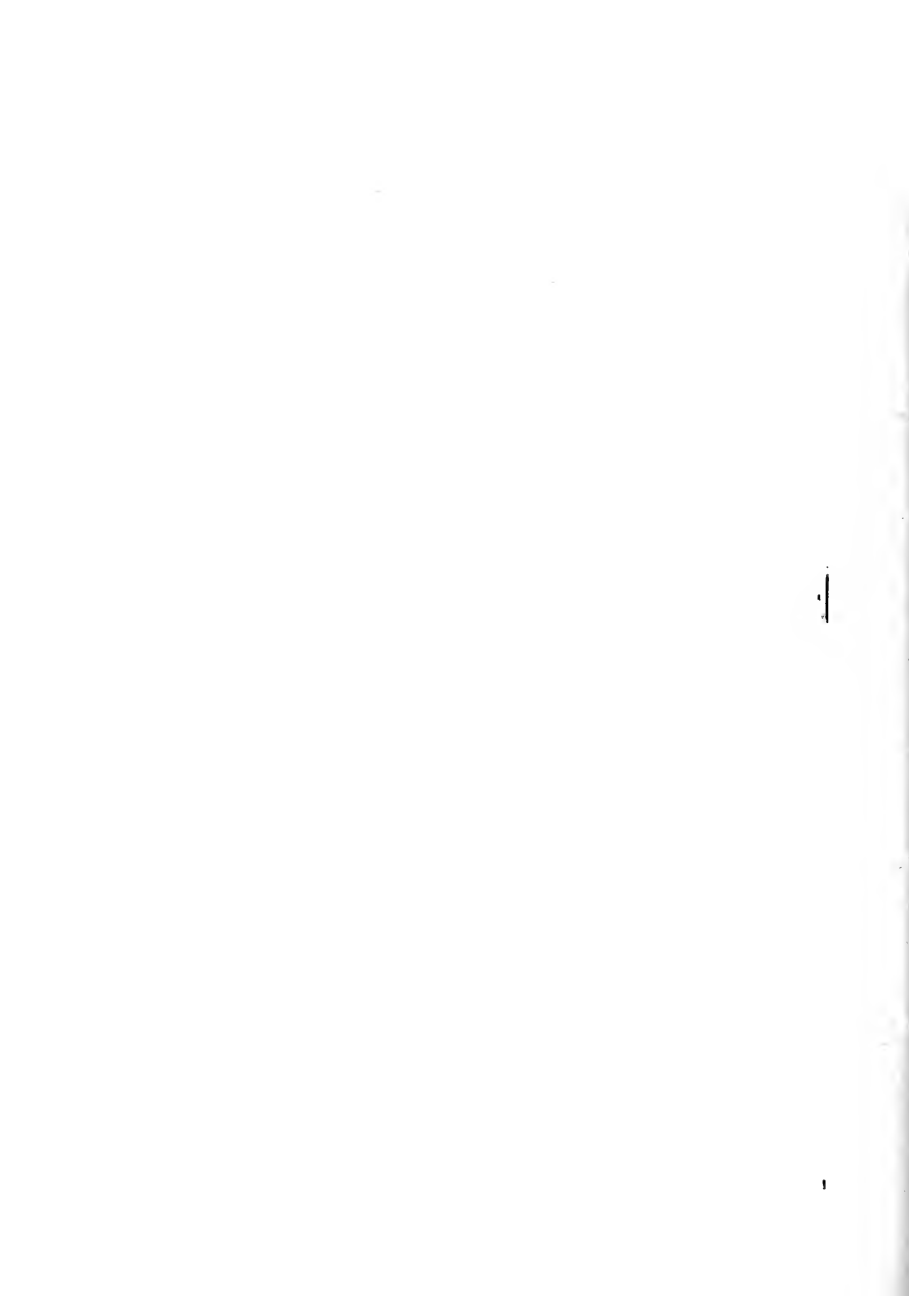
EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

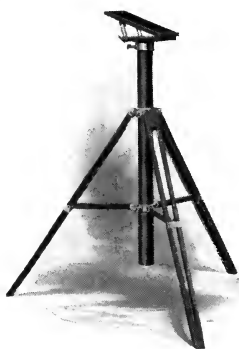
All Dealers'.

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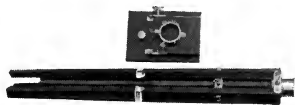
The F. & S. COLLAPSIBLE STAND



This stand is light, rigid and compact. It weighs but six pounds, and, when folded, is 37½ inches long.

The felt-covered tilting top measures 6¾ x 9½ inches, and may be revolved or tilted to any position. The top is fitted with a standard tripod screw, and is amply large to afford a firm support for the camera. The top may be lowered to within 33 ins. or elevated to 47 ins. from the floor.

Metal work is nickel and aluminum. The wood work is in mahogany finish.



F. & S. Collapsible Stand, complete, \$12.00

FOLMER & SCHWING DEPARTMENT
EASTMAN KODAK CO. ROCHESTER, N. Y.

Our 1918 Catalogue

The selling power of your pictures is measured against the selling power of a thousand and one other novelties that crowd the show windows on your street and it is a mistake to think that your sole competitor for the favor of the buying public is your brother photographer. You must compete with every other person who has something to sell and to attract the elusive dollar you must make a showing as good as, or better than, your competitors.

No other single factor has proved itself of greater attracting force than a variety of styles in the pictures you offer, for the days of one style only have long since passed.

You have ere now received a copy of our new catalogue and in it we offer you a wide range of high-grade mountings, from which, through the stock house, you can secure the mounts that will render what you have to sell different from and more attractive than the offerings of your competitors in general.

Canadian Card Co., Toronto

PHOTOGRAPHIC MOUNTS
MADE IN CANADA

Get the enlargement business.
If contact prints will sell

ARTURA CARBON BLACK

enlargements with contact print
quality will also sell. You can
duplicate the surface, tone and
texture, as well as the quality
of the contact print on Artura
Carbon Black.



CANADIAN KODAK CO.,
LIMITED,
TORONTO, CANADA.

All Dealers'.



FROM AN EASTMAN PORTRAIT FILM NEGATIVE

*General Electric Co.
Schenectady, N. Y.*



STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

ESTABLISHED 1906

VOL. 10

MAY 1918

No. 3

A MODEL DARK-ROOM

It is generally conceded that the dark-room, especially in the small studio, receives less thought and attention in comparison with its importance than it should receive.

Because the dark-room must be dark it is usually chucked away into a space that can be used for no other purpose. Because it must, at times, be dark, no provision is made for *ever* having it light, and a place that is never light more likely than not is never clean.

The man who uses the dark-room is glad when he can get out of it. The boy who sweeps out the place reaches into the dark with his broom and brushes out the plate boxes and allows the dirt to remain, and a scrubbing out is a thing unheard of.

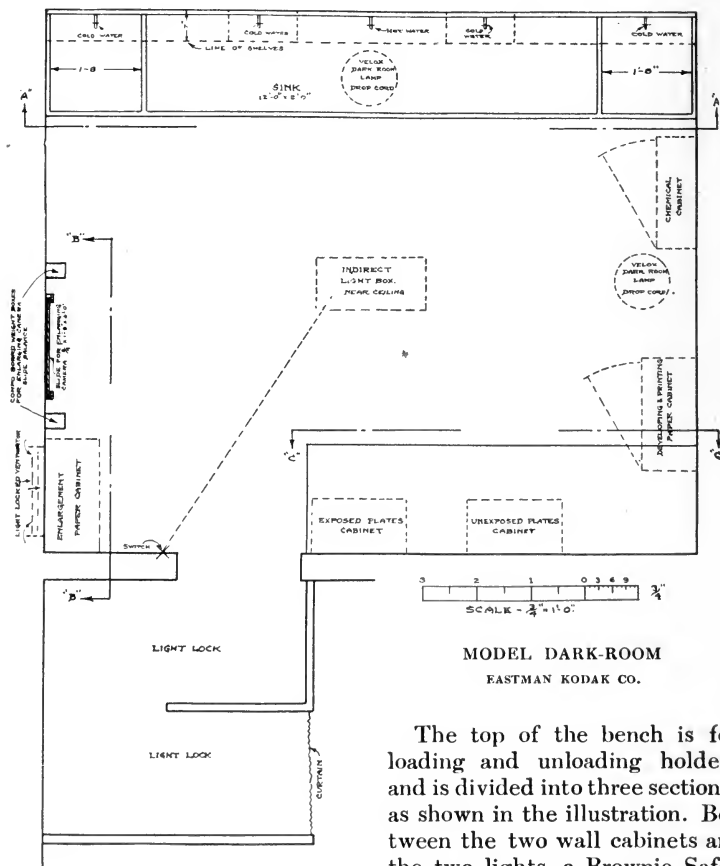
Dark-rooms have a bad reputation—and some deserve it, but the interest in the Model Dark-Room exhibited at recent East-

man Schools indicates that the trend is towards a better and more efficient light-room that can be made dark.

As we have had numerous inquiries for the plans and illustrations of the Model Dark-Room, we are publishing them for the benefit of all our readers.

As will be seen by the diagrams and illustrations, this room was planned as a printing and enlarging room, as well as a place for the developing of negatives. And while many photographers may find it more convenient to have separate departments for each line of work, it is a simple matter to plan two or three rooms containing the conveniences shown in the one.

The room is 10 x 12 x 10 feet with a light lock entrance. The film and plate loading bench with negative drying shelf beneath is at the right of entrance, the printing machine, paper cabinet and chemical cabinet are at the right of the room, the sink and



MODEL DARK-ROOM
EASTMAN KODAK CO.

developing lights are at the back of the room, and the enlarging apparatus and paper cabinet at the left.

The lower shelf of the loading bench contains an electric fan, negative drying racks and a hinged door as a protection.

The top of the bench is for loading and unloading holders and is divided into three sections, as shown in the illustration. Between the two wall cabinets are the two lights, a Brownie Safelight Lamp above for plate changing, when a small amount of light is needed, and a Kodak Safelight Lamp below for greater illumination.

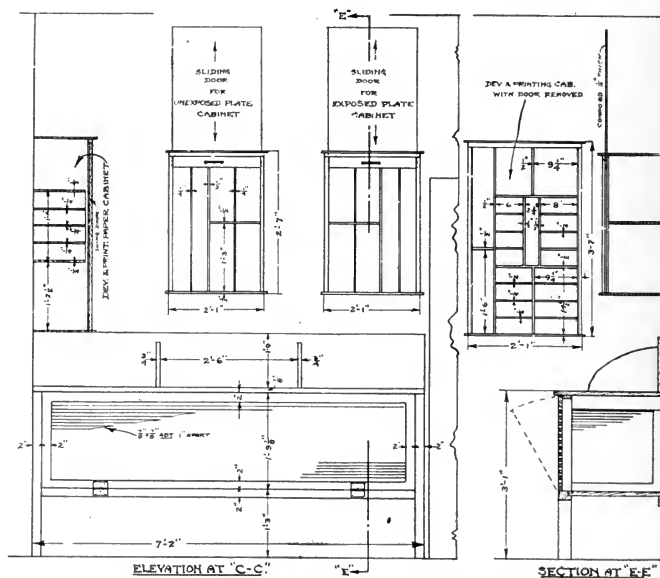
One lamp may be fitted with a safelight for handling films or orthochromatic plates, and the other for material not color sen-



Model Dark-Room—Plate Loading and Drying Bench

sitive. The two film or plate cabinets have sliding doors with counter balance weights which hold the doors up when the cabinets are open but which are not heavy enough to prevent them from remaining closed. A rack

is placed at each side of the cabinet for plate or film kits, and on each side wall, but not shown in the illustration, are ten-inch rods at right angles to the wall, each of which will hold a dozen Film Developing Holders.



Plan of Loading Bench and Paper Cabinet

At the left of the loading bench is a paper cabinet with a sliding door, an 8 x 10 Crown Printer with a Velox Dark-Room Lamp above and directly over this, on the wall behind, a six compartment frame containing four negatives of varying density.

These are arranged with two blank openings so that the negatives to be printed from may be placed in one or the other of the openings and so compared with the four negatives for which the printing exposure on the papers used has been carefully calculated. By this means of comparison the correct exposure for any negative may almost always be de-

termined without the usual loss of paper in test exposures. As the light in the illuminated frame is only flashed on for an instant while the comparison is being made, the electric current consumed is of no consequence.

Possibly the most important part of a dark-room is the sink and its arrangement, though with different methods of working the arrangement will necessarily vary. The arrangement shown is excellent and allows the worker considerable latitude. It affords ample room for the development of films, plates, prints or enlargements, and with the chemical cabinet at the right, the shelf

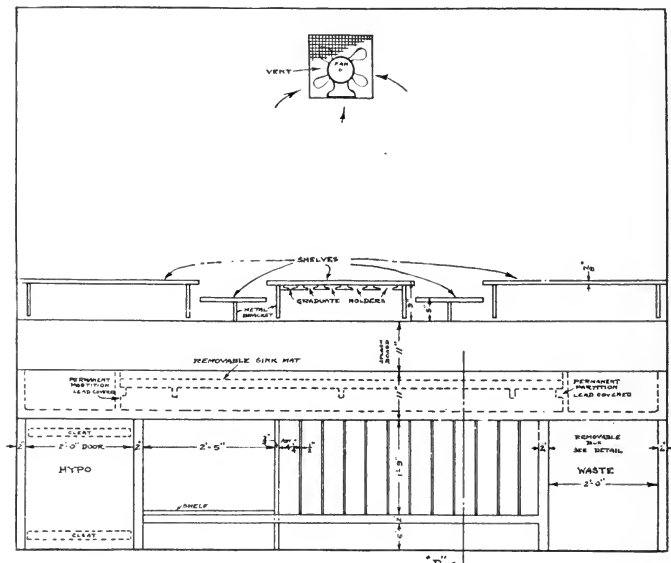


Model Dark-Room—Showing Printing Conveniences

for scales above and the water close by, there is every convenience for the compounding of stock solutions and developers.

As will be seen by the diagram, the sink is divided into

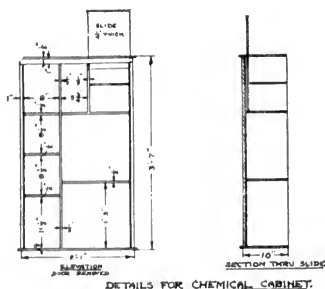
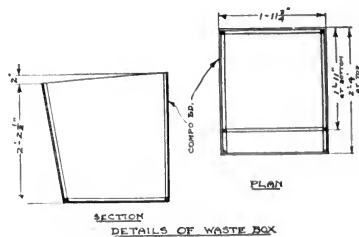
three compartments, that at one end for negative washing, the one at the other end for developing and fixing boxes, and the large center compartment for tray development and print washing.

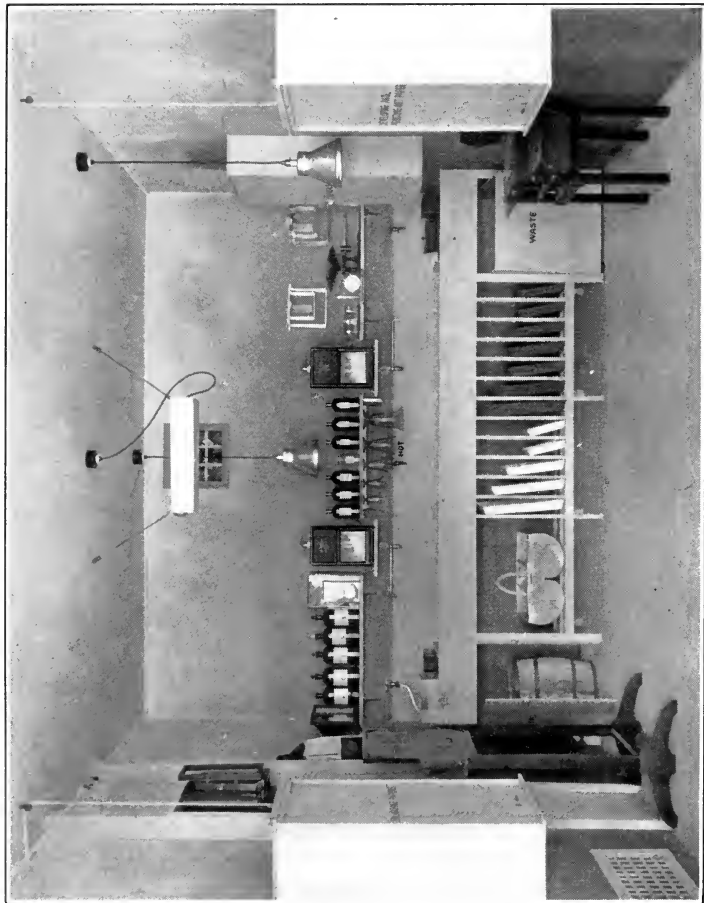


The sink mat is in sections and is removable. One section may be taken out to make room for a Rounds Print Washer for which there is a storage shelf beneath. The sink itself is lead lined.

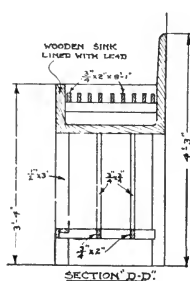
At each end beneath the sink there is a compartment, the one at the left with a hinged door for a keg of hypo, and the one at the right for waste. The center is divided into compartments for trays.

There are five water faucets, four for cold water and one for hot. This hot water will be found a great convenience in cold weather, and no dark-room should be without it. At either side of the hot water faucet is a swivel





Model Dark-Room—Back View

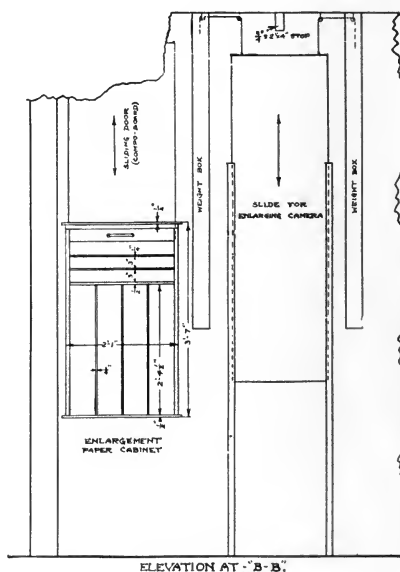


faucet for cold water. The spouts of these faucets are about ten inches long so that they come well out over the sink. The spout is connected with the valve so that

the water is turned on as the spout is drawn out from the wall and shut off as it is pushed back out of the way.

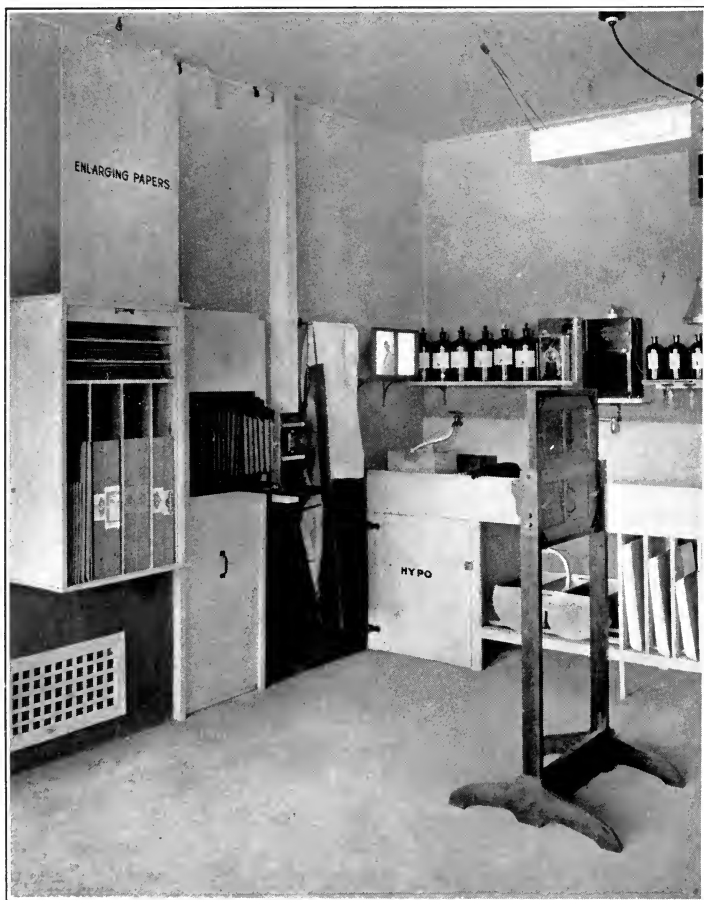
Directly over the center of the sink is a shelf for developers and on the under side of this shelf are cleats for holding graduates upside down. At each side of the center is a No. 1 Wratten Safe-light Lamp and at the right, a shelf for scales, etc., above which are racks for developing holders. The shelf at the left may be used for plate tanks, large bottles of stock solution, etc.

At the extreme left end of the sink is an illuminator in which there is a standard negative which is to be used as a guide in securing negatives of uniform printing strength and quality. By comparison it can be readily determined whether or not a negative needs after-treatment, and if so, it can be reduced or intensified before it leaves the dark-room. This illuminator is best seen in the picture showing the enlarging outfit.



It may also be mentioned that there is a ventilator in the wall above the sink and an intake in the wall near the floor beneath the enlarging paper cabinet. The upper ventilator is equipped with a fan which forms sufficient suction to completely change the air in the room in a few minutes. In warm weather this fan may be kept running at a very slight expense and the air of the dark-room will always be sweet and fresh and dry, which, as everyone knows, is very important to the health of the worker.

It will also be noted in these illustrations that there is an inverted light box suspended from



Model Dark-Room—Showing Enlarging Outfit

the ceiling which furnishes the general illumination. This may seem an extravagant use of light, but when the room is used continuously for either printing, enlarging or developing, a general

illumination is a great comfort and the room so lighted seems, in a short time, to be so light as to be an unsafe place to work. This, however, is not true if proper safelights are used.

Most workers have become so accustomed to a dark-room—have, in fact, been brought up in a dark room, and a light dark-room seems as inconsistent as it sounds. The Indirect Light Box may be had with either one or two light compartments, 10 x 12 inches in size. If the double compartment box is used, one side may be fitted with a light yellow or orange safelight, the Wratten Series 00 for Artura or similar paper, or the Series 0 for enlarging papers, and the other side with a Series 1 or Series 2 for ordinary plates or for film or orthochromatic plates.

At the left of the sink is the enlarging apparatus, which is about as convenient and at the same time as inexpensive an arrangement as could be devised. The F. & S. Reversible Back Enlarging Camera is mounted on a sliding panel, which, when raised, places the camera entirely out of the way.

The panel is balanced by sash weights which are enclosed in Compo-board boxes attached to the wall. The weight cords run over pulleys in the ceiling. The enlarging light is outside the dark-room, and the enlarging easel, when not in use, stands in front of the panel close to the wall. At the left of the camera is the paper cabinet with a weighted sliding door.

The diagrams give the dimensions of the cabinets, the sink,

etc., and with the illustrations one can form a very good idea of the room and its arrangement. The main points are economy of space, convenience for the worker, good ventilation and plenty of light. In such a work-room one should be able to turn out the maximum amount of work with the least labor and always have clean, healthy surroundings.



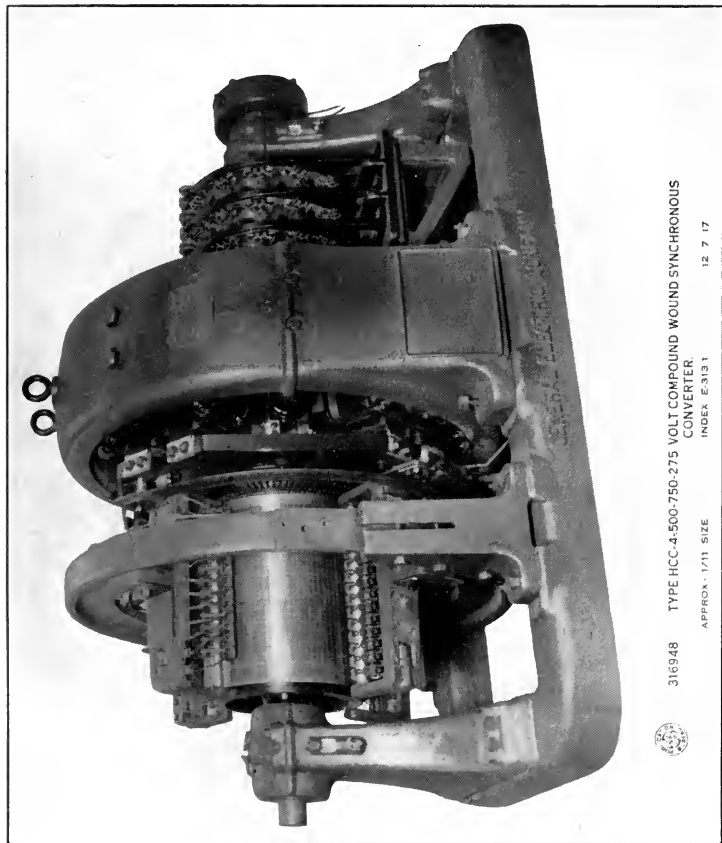
TANK DEVELOPMENT OF PORTRAIT FILM

As a rule the photographer who follows the printed formula is the photographer who gets the best results. The development of Portrait or Commercial Film is very simple with either the tray or the tank method, but for convenience, economy and quality of results tank development is recommended.

The first users of films were big consumers and practically all of them used the tank method. The number of big consumers is constantly increasing, but smaller consumers are also being added to the list daily.

Many of these have made their beginning with tray development, and while tray development of films is more simple and convenient than tray development of plates, there is still greater convenience in tank development.

For either tray or tank development Pyro is recommended,



316948

TYPE HCC-4-500-750-275 VOLT COMPOUND WOUND SYNCHRONOUS
CONVERTER.

APPROX. 1/11 SIZE

INDEX E-313 I

12 7 17

FROM AN EASTMAN COMMERCIAL ORTHO FILM NEGATIVE

*General Electric Co.
Schenectady, N. Y.*



experience having taught that the best results possible are produced by this developer. The peculiarity of Pyro, however, is that the color which gives the best printing quality in the negative is produced by a slight oxidation of the Pyro.

If the necessary chemicals are added to a Pyro developer to give it good keeping quality, oxidation is retarded and the Pyro color is more or less eliminated. The three following formulas have been worked out for film and found to give the most satisfactory results.

The first is recommended for the excellent printing quality of negatives it will produce, which more than makes up for the trouble of preparing fresh solution for each batch of films that is developed.

The second developer gives medium warm tones. It will keep for two days and give negatives of excellent quality, but it must be discarded after two days' use. This developer will be found a great convenience by those photographers who have a fair number of negatives to develop each day and prefer a slightly warm-toned negative. It gives Pyro quality but has the advantage of reasonably good keeping quality.

The third developer has excellent keeping qualities when compounded carefully in accordance with instructions, and by the addition of a strengthening solu-

tion will keep for several weeks and produce excellent results. The negatives are of a blue tone. The keeping quality, however, depends entirely on the proper compounding of the formula.

The three formulas are as follows:

A. B. C. PYRO TANK FORMULA

FOR WARM TONES

Stock Solution A

	For 48 ozs. Solution	For 96 ozs. Solution
Water	16 ozs.	32 ozs.
Sodium Bisulphite or Potassium Metabi- sulphite	70 grs.	140 grs.
Pyro	1 oz.	2 ozs.
Potassium Bromide . .	8 grs.	16 grs.

Stock Solution B

Water	16 ozs.	32 ozs.
C. K. Co. Sulphite of Soda	1 3/4 ozs.	3 1/2 ozs.
(Or Hydrometer Test 55)		

Stock Solution C

Water	16 ozs.	32 ozs.
C. K. Co. Carbonate of Soda	1 1/4 ozs.	2 1/2 ozs.
(Or Hydrometer Test 40)		

For the one gallon tank take 5 1/2 ounces each of A, B and C and add water to make one gallon. For the 3 1/2 gallon tank take 19 1/4 ounces each of A, B and C, and add water to make 3 1/2 gallons. When large tanks are used, make up the large quantity of solution. Develop for about 12 minutes at a temperature of 65° F. Any scum that may form on the surface of the developer *must be removed before* developing films.

TANK DEVELOPMENT FORMULA

FOR MEDIUM WARM TONES

Good only for two days use.

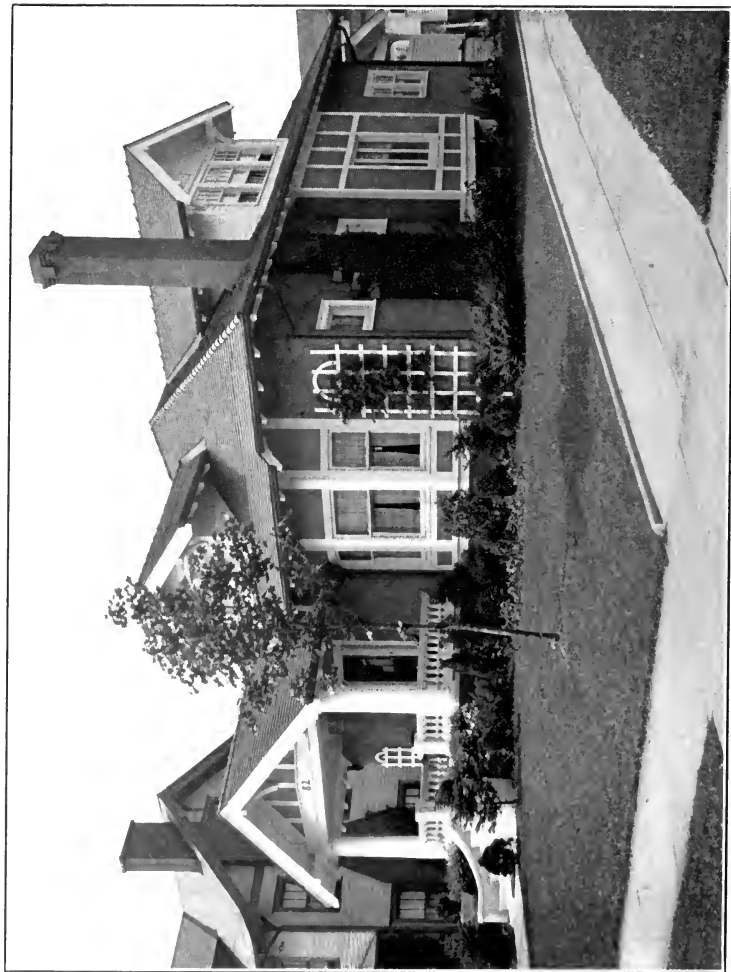
Pyro	1 oz.	3 1/2 ozs.
C. K. Co. Sul- phite of Soda	1 3/4 ozs.	6 ozs. 55 grs.
Bisulphite of Soda	1 1/4 oz.	385 grs.
C. K. Co. Car- bonate of Soda	3/4 oz.	2 ozs. 275 grs.
Water to	1 gal.	3 1/2 gals.



FROM AN EASTMAN PORTRAIT FILM NEGATIVE

*The B. F. Goodrich Rubber Co.
Akron, Ohio*





FROM AN EASTMAN COMMERCIAL ORTHO FILM NEGATIVE

*The B. F. Goodrich Rubber Co.
Akron, Ohio*





FROM AN EASTMAN PORTRAIT FILM NEGATIVE

General Electric Co.
Schenectady, N. Y.



The following instructions *must* be strictly followed, as the keeping qualities of this developer depend entirely upon the method of preparation.

Dissolve the Sulphite first, in three quarts of hot but not boiling water. When dissolved, add the Bisulphite and then *boil* the solution for five minutes. Cool to about 70° Fahr. and add the Pyro. Dissolve the Carbonate in one pint of warm water. Pour these two solutions into the tank and make up to one gallon with water, or three and a half gallons, as required. Develop for about 13 minutes at a temperature of 65° F.

This developer gives a medium warm tone and will keep well for two days. The color progresses with the age of the developer. Any scum on the surface must be removed before developing films. It must be discarded after two days.

TANK DEVELOPMENT FORMULA

FOR BLUE TONED NEGATIVES

The following Pyro-Soda formula, based upon the use of a neutral sulphite obtained by the combination of Sulphite of Soda and Sodium Bisulphite, gives excellent results:

Pyro	{ 1 ozs. 4 ozs. 85 grs. 80 grs.
C. K. Co. Sulphite of Soda {	6 ozs. 22 ozs. 175 grs. 175 grs.
Sodium Bisulphite . . .	1½ ozs. 5¼ ozs.
C. K. Co. Carbonate of Soda	2 ozs. 7 ozs.
Potassium Iodide . . .	5 grs. 18 grs.
Water up to	1 gal. 3½ gal.

The following instructions *must* be strictly followed, as the keeping qualities of this developer depend entirely upon the method of preparation.

Dissolve the Sulphite first, in three quarts of hot but not boiling water. When dissolved, add the Bisulphite and then *boil* the solution for five minutes. Cool to about 70° Fahr. and add the Pyro. Dissolve the Car-

bonate in one pint of warm water, then add the Iodide. Pour these two solutions into the tank and make up to one gallon or three and one-half gallons with water.

The most satisfactory temperature for developing is 65° Fahr. The solution should not be used below 60°.

When the developer is first made and used, the developing time at 65° F. is about 18 minutes.

This made-up developing solution may be kept in the Developing Box, but when not in use, it should be covered to prevent evaporation and deterioration. A floating cover of wood made to fit inside the top of the box is recommended.

After the developer has been used for several batches of films, it will be necessary to strengthen it with the addition of each new bath. The strengthening solution is made by dissolving the chemicals named in the following formula and using exactly the same method for preparing it, as when preparing the first developer.

STRENGTHENING BATH FORMULA

Pyro	¼ oz.
C. K. Co. Sulphite of Soda	1 oz. and 150 grs.
Sodium Bisulphite	150 grs.
C. K. Co. Carbonate of Soda	3 ozs. and 50 grs.
Potassium Iodide	4 grs.
Water up to	60 ozs.

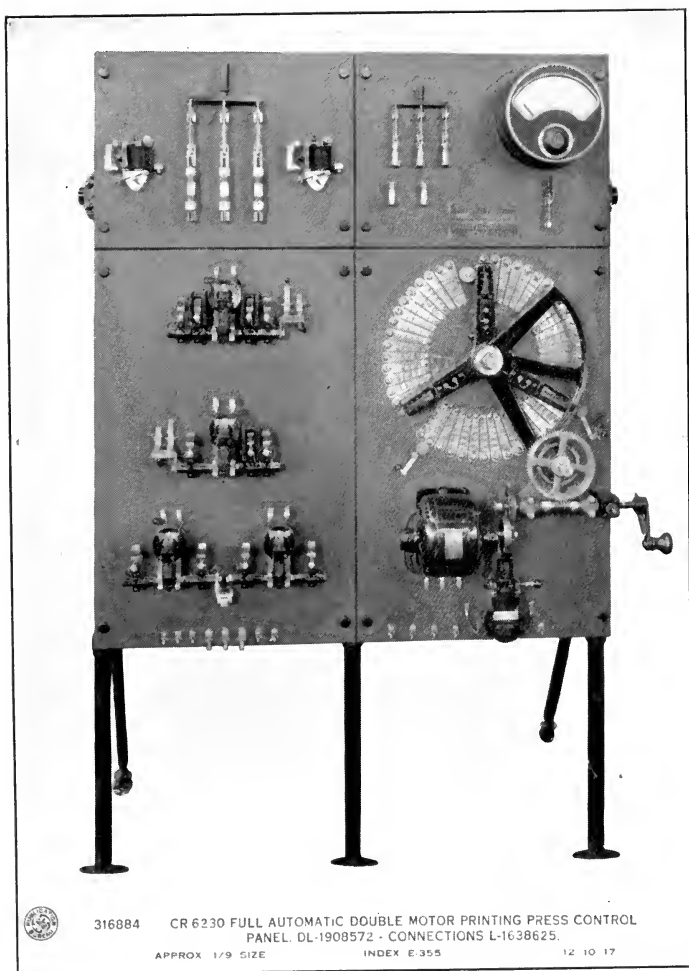
Add this strengthener to the developing solution in the tank as needed, to keep up the developing strength of the solution.



Get the BEST result, use

**EASTMAN
PROFESSIONAL FILM**





FROM AN EASTMAN COMMERCIAL ORTHO FILM NEGATIVE

General Electric Co.
Schenectady, N. Y.



HOW PICTURES HELP

In an article in the April *American Magazine*, "Pictures Burned into my Memory," Charles W. Whitehair relates a number of his experiences as a Y. M. C. A. worker on the western battle front.

In this intensely human narrative of his impressions of the men and their wonderful fighting spirit, he lays special stress on the necessity for encouragement from the folks at home.

"There are two things they *always* carry with them; photographs of the 'home folks' and their letters. The pictures, often with a small testament, are always in that breast pocket over the heart. I think they sometimes are put there as a kind of charm to ward off bullets. Anyway, that's where they always are. And the look in a man's face when he shows you the picture of his mother, his wife, his children, and you say—as you always do—that they are beautiful, will bring tears to your own eyes."

Photography is doing wonderful things in this great war, we all know. We read of the thousands of photographs that are made of the enemy country and the great worth of the information gained from them.

But few of us realize the importance, in fact, the real necessity for these other photographs,

as does this man who has spent two years of his life among the men who have given their all for home and country.

They need that moral support that can only come from the folks at home—from those they love, many of whom have not yet learned that there is a streak of sentiment in every soldier's breast.

We are learning from those whose business it is to provide comfort and entertainment for our soldiers in their leisure hours that the greatest help can still come from home. We are learning that the greatest benefits to the morale of our fighting forces come with the mail that brings letters of cheer and pictures of the home folks.

When you urge the families and friends of the boys in camp or in France to send them pictures, you are doing them a service they will appreciate. Making pictures is your business and making the best pictures you know how to make for our soldiers, regardless of the price you receive for them, is also your patriotic duty.

The more you advertise for this business and the more of it you get, the greater is the service you render. But don't forget that it is an advertising crime to capitalize on death.

As much as has been said on this subject, photographers who do not carefully analyze their



316875

TYPE CP AIR CIRCUIT BREAKER 250 VOLT. 800 AMP.

APPROX 1/3 SIZE

INDEX E-356.1

12 4 17

FROM AN EASTMAN COMMERCIAL ORTHO FILM NEGATIVE

*General Electric Co.
Schenectady, N. Y.*



advertising copy continue to use such arguments as: "Send your soldier boy a photograph to-day—to-morrow may be too late."

It is your duty to dispense cheer. If telling of the happiness these pictures will bring to the boys won't get business, painting gloom pictures will certainly have less weight as a selling argument.

The magazines are full of stories that tell of the soldier's appreciation of news from home. There's no better news than that which carries with it pictures of the home folks.

Make your advertisements cheerful. Make a strong drive for this business, for in making business for yourself you are making happiness for others.



OUR ILLUSTRATIONS

In a great many cases, the biggest expense in securing suitable illustrations of manufactured articles for catalogues or other similar purposes is the expense of retouching. By retouching we mean retouching of a print, or artist's work.

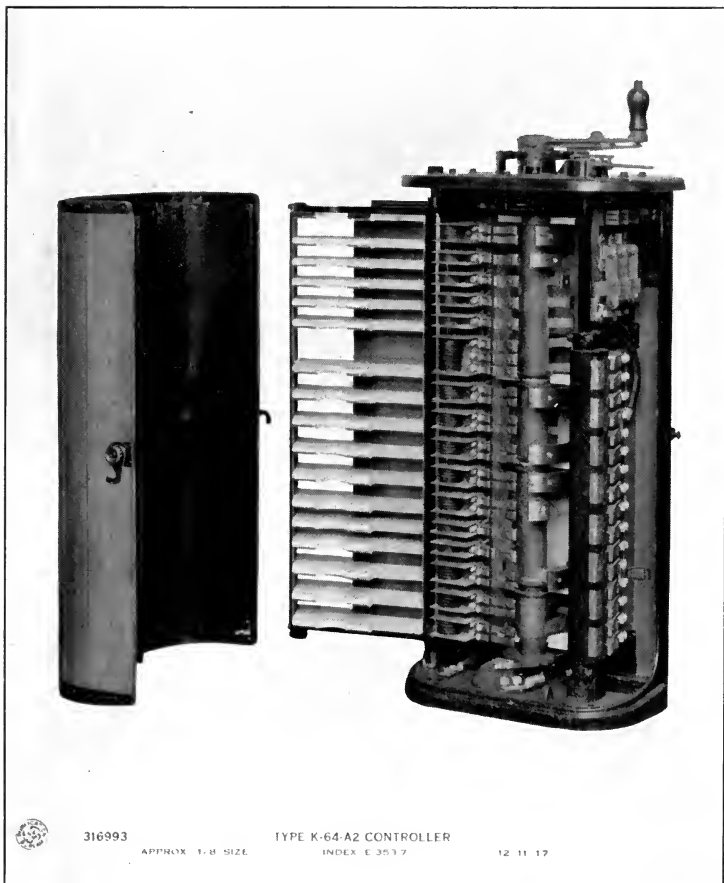
The artist can paint beautiful reflections on bright metal, can accentuate important parts of a piece of apparatus or subdue others, but the result is seldom as satisfactory to the man who knows how a machine should appear as is a perfect photograph which he knows must show the machine as it really looks.

The expert commercial photographer works to avoid retouching. He may use a grey water paint occasionally on black metal but more often he depends upon plenty of light. He may dull extremely bright parts but he secures excellent results in cutting out reflections by using a filter. If a subject requires color correction he uses orthochromatic material, and if he has halation to contend with he uses the material that doesn't produce halation.

Our illustrations are excellent examples of the work required by the manufacturer. The prints are from film negatives that have not been "doctored" and there is no need of retouching to improve the prints.

Photographers in the big factories, or industrial photographers as they are usually called, are keenly alert to the photographic needs of their business. They must keep pace with industrial progress and Commercial Film—Commercial Ortho Film—and Portrait Film is helping them to do it.

They use film not only because they find the quality of results superior but the convenience of handling film, the small space required for storage, the elimination of breakage and the readiness with which the film records are filed for reference—all these appeal to the man trained in the methods of efficiency.



FROM AN EASTMAN COMMERCIAL ORTHO. FILM NEGATIVE

*General Electric Co.
Schenectady, N. Y.*



ENLIST YOUR LENS IN THE U. S. ARMY

The people are asked to help the Signal Corps of the Army get lenses enough for cameras for the fleet of observation airplanes now being built. The need is immediate and of great importance. The lens is the eye of the Army.

The situation is that, American manufacturers are not yet in a position to meet the sudden demand for special lenses for aerial service. Possessors of the required types are, therefore, urged to do their bit by enlisting their lenses in the service of the Army. They are asked to immediately notify

Equipment Division

Care of Signal Equipment No. 33

119 D Street, N. E.

Washington, D. C.

of lenses of the following descriptions which they are willing to sell, stating price asked:

Tessar Anastigmat Lenses made by Carl Zeiss, Jena, Zeiss Tessar by Ross of London and Goerz Dogmar, of working apertures of F. 3.5 or F. 4.5, from $8\frac{1}{4}$ to 20 inch focal length.

Bausch & Lomb Zeiss Tessars, F. 4.5, from $8\frac{1}{2}$ to 20 inch focal length.

Voigtlander Heliar Anastigmat Lenses, F. 4.5, $8\frac{1}{4}$ to 24 inch focal length.

Practically all of the lenses of these and other foreign makes of anastigmats in America will be required, but the $8\frac{1}{4}$ inch lenses are most urgently needed, also a number of Bausch & Lomb Zeiss Protars VII A No. 13, preferably set in Volute shutters.

(It is requested that the press and individuals giving publicity to the above give the specifications of the lenses desired accurately. This will avoid the labor and delay of unnecessary correspondence with people offering lenses that are unsuitable.)



There is sentiment in every soldier's heart. It stirs at sight of his flag—at the thought of home and as he looks again and again at the precious pictures of the home folks he carries in his pocket.

Make the appointment to-day

THE PYRO STUDIO

Line cut No. 251. Price, 50 cents.

THE ONLY CONDITION

We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first*. C. K. CO., LTD.

Before the war
we recommended

TOZOL

*The Complete Developer for
Photographic Papers.*

It's the same to-day, is the best developer on the market for Artura, Azo and Velox papers, and your dealer can supply you.

The genuine is always better than the best substitute.

THE PRICE

1 oz. bottle	\$ 1.10
$\frac{1}{4}$ lb. bottle	4.00
$\frac{1}{2}$ lb. bottle	7.75
1 lb. bottle	15.00

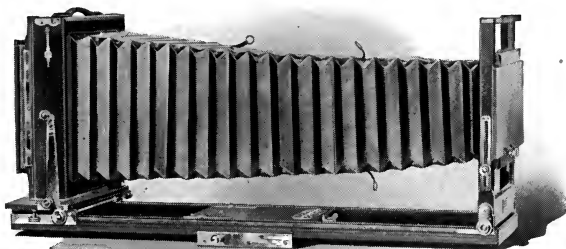
Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.

Seven by Eleven

*A new sized picture with
big commercial possibilities*



Eastman View Camera No. 2

7 x 11

For either vertical or horizontal subjects, the proportions of the 7x11 picture are better than those of the 8x10. Especially suitable for groups, architectural subjects and landscapes. The pictures look larger and sell better, yet the material costs no more.

The 7x11 Eastman View Camera No. 2 has a swing of unusual latitude, a $6\frac{1}{4} \times 13\frac{1}{2}$ front board and a sliding arrangement which permits the lens to be centered on either half of the film or plate when making two exposures on a 7x11. This camera is an improved model of the Empire State and Century View and embodies every practical convenience.

THE PRICE

Eastman View Camera No. 2, 7x11, with
case and one Plate Holder . . . \$55.00

Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers' . .

*Show albums and you
will sell albums*



EASTMAN PORTRAIT ALBUMS

in the homes of your patrons will increase your business by stimulating the interchange of photographs. An album that will hold forty-eight photographs will create a demand for forty-eight portraits to fill it.

The way to sell albums is to have them in stock, show them and explain their practical usefulness. Eastman Portrait Albums are adaptable to 87% of the sizes of portraits now made by photographers.

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

All Dealers'.

Uncertainty has no place in the compounding of photographic formulæ—results depend upon the positive action of the chemicals used.

Specify C. K. Co. Tested Chemicals and be sure of your results.



Look for this seal on the container.

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

THE EASTMAN FOCUSING CAP

For Enlarging Cameras

is designed to aid in composing the image properly. Consists of a block with an opening in the center to admit the lens barrel. The opening is adjustable to different sizes.

The front edge of the block contains a slide with two apertures, one of which is covered with ruby glass as a safeguard when the paper is being placed, the other aperture being uncovered.

After composing the image on the paper by the *safelight* coming through the ruby glass, make the exposure by sliding the uncovered aperture before the lens.

THE PRICE

No. 1—For lens barrels of $1\frac{1}{2}$ to $2\frac{1}{4}$ inches diameter \$.75

No. 2—For lens barrels of $2\frac{1}{4}$ to 3 inches diameter 1.00

No. 3—For lens barrels of 3 to $3\frac{1}{8}$ inches diameter 1.50

Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.



The Press Graflex

for 5 x 7 Pictures

The Press Graflex is designed to meet the exacting requirements of the Press and Commercial Photographer.

The camera may be brought into action quickly, and the subject viewed on the Focusing Screen, right side up, in the full picture size.

Focus and composition are under absolute control up to the very instant the shutter is released.

Automatic exposures from $\frac{1}{10}$ to $\frac{1}{1500}$ of a second, and adjustment for time exposures, provide for an almost unlimited variety of pictorial work.

Graflex Roll Film, Premo Film Packs or Plates, may be used with the various attachments.

*Ask for the Graflex Catalogue free at
your dealer's or by mail.*

Canadian Kodak Co., Limited,

Toronto, Canada

THE OVERSEAS



For 4 x 6—

Oval and Square

Prints—Slip under style.

Colors—Grey and Brown.

*The style that
makes your prints
look larger.*

The Overseas gives you an entirely new slip-under folder. The Insert is of specially finished stock, double tinted. The Inside tint of a darker shade blends right in with the tone of print and gives your print a 5 x 7 appearance. The Cover is of new enamel stocks of attractive shades and finish, and a rich Egyptian design is brought up in gilt and color enamel on upper left-hand corner.

This is one of our most attractive styles for 1918.

SAMPLE MAILED FREE

MANUFACTURED BY

Canadian Card Co., Toronto, Canada.

PHOTOGRAPHIC MOUNTS

MADE IN CANADA

STUDIO LIGHT

INCORPORATING

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

ESTABLISHED 1906

VOL. 10

JUNE 1918

No. 4

FOR YOUR OWN GOOD

No one, in any line of business, needs to be told, in these days, that competent help is hard to get and equally hard to retain, for his personal experience must have borne the facts in on him. This difficulty causes especial embarrassment in the matter of hurry-up orders which throw the regular routine out of order by reason of the pressure that has to be applied to secure the dispatch of the rush item.

Very few rush orders are genuine: most of them are marked rush because some one has overlooked making provision to meet a need that was known of several days or even several weeks before. Our customers have been served consistently and efficiently both in quality of goods and in promptness of supply, but it is to be remembered that the help situation is not getting any easier. May we ask that every means be used towards the elimination of

rush orders or rather towards the reduction of their number. The stock houses will appreciate your consideration in this regard and so shall we.



IN GREAT BRITAIN

The following is taken from the April number of *The Photographic Dealer*, of London, and gives an interesting sidelight on matters photographic in the British Isles:

Present *minimum prices* for Bulk Postcards are as follows:

Best quality Bromide, Gaslight, or P. O. P., 57s. net per 1,000, or 55s. net per 1,000 in lots of 5,000 and upwards *of one variety*.

Commercial quality Bromide, or Gaslight Postcards, 53s. and 51s. net per 1,000 respectively.

Self-Toning Gelatine Postcards, 63s. 6d. net per 1,000.

Self-Toning Collodion Postcards, 70s. net per 1,000.



ANOTHER ADVERTISING DRIVE

Hundreds of thousands we know—possibly a million of our men, over there, are waiting for the big drive that will lead them to victory. They are our boys and we have their welfare at heart, so much so that we do not hesitate to dig deep into our pockets to help any cause we know to be for their welfare.

The great American spirit back of the Red Cross, the Y. M. C. A. and similar organizations, has become the wonder and has excited the admiration of the world. All of these things help the morale of an army and navy—show that they have the solid backing of those at home. They represent a collective interest that is big and broad.

But the individual man over there wants all of these and something more. To be happy he must have the individual interest of those at home—their letters and their pictures—these will bring a smile to his face and a joy to his heart in the most trying times—and when all other means fail.

Our boys must have what they want, and we are making an effort to see that they get it—are making an advertising drive for it.

By the time this reaches you the big drive will be on. We will be reaching the public with one

of the most forceful and timely pieces of advertising we have ever used.

As will be seen by the advertisement itself, which is reproduced on page 7, it is the kind of copy that will appeal to millions of loyal Americans who have boys in the service—and the results of this advertising will carry cheer to these boys in the trenches or on their way.

We have it directly from those who have been with the men in action, that the things they prize most are the pictures of the home folks which they carry with them always.

You are, no doubt, advertising for this business. If you are not, this is the time you should put forth your strongest effort to get it. If every mother or father of a boy in the service were to send photographs to that boy—and they all should—the photographer's business from this source alone, would be enormous.

We reached several million women with a similar advertisement in the April *Ladies' Home Journal*. The list of magazines which will carry the copy shown on page 7 is so large and the readers they will reach so nearly cover every walk of life that we will hope to reach the greater proportion of families that have been affected by the raising of our great army and navy.

With one or two exceptions the copy will appear as a full



ARTURA PRINT, FROM AN EASTMAN PORTRAIT FILM NEGATIVE

*By Emma Gerhard
Middle Atlantic States Convention*



page. The list for June includes:

Century
The American Magazine
Harper's Magazine
Scribner's Magazine
Country Life in America
National Geographic Magazine
Review of Reviews
World's Work
Popular Mechanics
Life
Red Cross
The New Republic

In addition to this, the same copy will appear in July

Hearst's
McClure's Magazine
Everybody's Magazine
Photo Play
Motion Picture

You could hardly reach the people in your own town that this advertising has reached and will reach, except by a house to house canvass—but you can make the advertising more effective, make your own advertising stronger and direct the resulting business towards your studio by following up this advertising with that of your own.

There should be a good business as a result, and a great satisfaction, it seems to us, will be in knowing that every picture that goes to France will make some one of our boys happy.



Use Eastman Portrait Film and get all the quality of your lightings in your negatives.

MAKE THE APPRENTICE EFFICIENT

Last month we suggested a method of giving apprentices a course of intensive training rather than allowing them to struggle along with little or no effort being made to increase their efficiency.

If you have an apprentice who is apt, give him every possible encouragement. Boost him along and he will make a good workman. These are times for casting precedent aside. Your dark-room man may have taken years to grow into his job, but you can't wait for a boy or girl to gain experience in this way. You must teach them in days what you have learned in years.

Photography is an open book. It can be made simple and understandable so far as the processes of developing, printing, enlarging and negative making are concerned. We will not say as much for posing and lighting in portraiture because these things can not be taught by rule.

Our previous suggestions on developing should be followed by a series of practical lessons on after treatment of negatives.

It has been said that fully fifty per cent. of all negatives, taken as they come, could be improved by after chemical treatment. You can prove or disprove this for yourself.

Go through a hundred negatives and pick out a perfect one,

That lad of yours, over seas.

All that is humanly possible is being done to see to it that he is well fed, well clothed and efficiently equipped. Organizations like the Y. M. C. A., are looking to his physical comfort, healthful recreation and clean fun. If he is sick or wounded the Red Cross will provide for him with tender, loving care.

Yet there is one thing that will bring a smile to his face and a joy to his heart that none of these can give; that only you can give—
your photograph.

There's a photographer in your town.

Eastman Kodak Company, Rochester, N. Y.

one that is too dense, one too thin, one too contrasty and one too flat.

The negatives that are too thin and the ones too dense may be entirely the results of over or under-exposure, development having been correct. The ones that are too contrasty may be the results of under-exposure and over-development or too contrasty lightings. The ones that are too flat may be the results of over-exposure and under-development or too flat lightings.

Pick such examples from your discarded negatives and by comparison with a perfect negative point out to your pupil these faults and their causes. The improvement of negatives by after-treatment is very simple, and by following a few fundamental principles, failure is almost impossible.

It is not necessary to go into the chemistry of after-treatment processes, as the idea is only to teach an apprentice the principles involved and the result of the proper treatment. Carefulness is the one important precaution.

Before a negative is reduced or intensified it must be thoroughly fixed and washed. It must be explained that when a negative is developed there is as much colorless bromide of silver in the gelatine as there is metallic silver that has formed the image. Fixing makes this silver bromide soluble in water and washing removes it, if fixing has been suffi-

ciently thorough to render it completely soluble. If any of this silver bromide remains in the gelatine film, stains will result. Hence—fix and wash thoroughly.

Of the negatives that need reduction the first are those which are merely too dense. Such a result is due to over-exposure, and as over-exposure adds density to all parts of a negative alike, the reducer which will correct over-exposure is one which will remove an equal amount of silver from all parts of the negative alike.

The well known Farmers Reducer should be used for this purpose. It is not a proportional reducer, and you should explain to the apprentice why it is not. John has two apples—Mary has ten. Take one from John and you have 50% of his apples—take one from Mary and you have 10% of her apples. You have taken equally but not proportionately from each.

FARMERS REDUCER

A

Water	1 oz.
Red Prussiate of Potash . . .	15 grs.

B

Water	32 ozs.
Hypo	1 oz.

Add A to B. Watch results closely. Use a white tray to see results best and work by artificial light, as working in daylight may cause stains.

For local reduction it is advisable to use two reducing solutions—one strong and another



ARTURA PRINT, FROM AN EASTMAN PORTRAIT FILM NEGATIVE

By T. L. Halldorson
Middle Atlantic States Convention



very weak one. The strong solution is applied locally with a tuft of cotton and the entire negative is occasionally immersed in the weak solution. This action produces an even printing color and does away with spottiness which might result from too great an amount of reduction in one place.

The action of the Persulphate Reducer is to attack the highlights without affecting the shadows. This is desirable if a negative is too contrasty but right in other ways. Too much contrast may be due to a very contrasty lighting or an under-exposure that is over-developed or an improper balance of the developing formula that produces harsh contrasty negatives from properly lighted subjects.

To reduce contrast the highlights must be reduced but the shadows remain as they are. The following reducer has this peculiar property and will produce excellent results:

PERSULPHATE REDUCER

Water	9 ozs.
Persulphate of Ammonia	1 oz.
Sulphate of Soda	80 grs.
Sulphuric Acid C. P.	80 min.

It is important that this solution be made at least twenty-four hours before use. Take one part of above to nine parts of water. When proper reduction has been secured immerse the negative in a 20% Hypo bath for five minutes and wash in running water for twenty minutes.

Over-exposure adds an equal amount of silver to all parts of the negative, but over-development of properly exposed negatives adds proportional amounts of silver to the various parts of the negative. If you wish to secure 50% proportional reduction you must take 50% of silver from the highlights, which is a great deal—50% from the middle tones, which is a much smaller amount, and 50% from the lower tones and shadows, which is a very little.

To secure this result the action of the reducer must take away silver in the same proportion as the developer has deposited it, so that the result after reduction is the same as if the negative had received less development in the beginning.

The action of such a reducer is remarkable and it is certainly very useful. It has often been claimed that Permanganate would reduce proportionately—but such is not the case. The following is the only known reducer of the kind and as it has been in use less than two years it may be new to you:

PROPORTIONAL REDUCER

A

Water	32 ozs.
Pernanganate of Potash	4 ozs.
10% Sulphuric Acid	½ oz.

B

Water	64 ozs.
Persulphate of Ammonia	2 ozs.

For use, take one part of A to three parts of B. When sufficient



ARTURA PRINT, FROM AN EASTMAN PORTRAIT FILM NEGATIVE

*By T. L. Halldorson
Middle Atlantic States Convention*



reduction is secured the negative should be cleared in a 1% solution of bisulphite of soda or metabisulphite of potash. Wash the negative thoroughly before drying.

Once your apprentice has had the use of these reducers thoroughly explained to him he should be required to reduce a number of negatives. He should first choose the proper reducer for each of a number of negatives and be set right if he makes the wrong selection.

He should then be given a standard to work to and should practice reduction until he is able to secure results that are, by comparison, practically uniform.

For the intensification of negatives we recommend the method of bleaching with mercury and re-developing with sulphite of soda. The same precautions must be observed as when reducing negatives, that is, they must be thoroughly washed and fixed to insure even intensification, permanency and freedom from stains.

INTENSIFIER

A

Water	12 ozs.
Mercuric Chloride	120 grs.
Potassium Bromide	120 grs.

B

Water	8 ozs.
Sulphite of Soda	1 oz.

Immerse the negative in solution A until the image is thoroughly bleached through the film. Then rinse well and blacken or re-develop in solution B. If in-

tensification is too great the negative may be dipped into hypo which will immediately start a reducing action. If left in the hypo too long the negative will be reduced to its original density.

Local intensification is difficult, but there is a very simple method of securing results without taking chances. For example, you have a negative of a bride in which the white drapery is perfect but the shadows are very much in need of intensification. If the entire negative is treated the drapery will be too dense.

Instead of locally intensifying the shadows, reduce the white drapery, thoroughly wash the negative and then intensify. The white drapery which was reduced will be brought back to its original density but all other parts of the negative will be intensified.

When you have selected a number of discarded negatives for the apprentice to work on, be sure that they remain in a washing tank long enough for the gelatine films to be thoroughly soaked up before they are treated.



Don't overlook the

Kodak

Advertising Competition

See page 25.





ARTURA PRINT, FROM AN EASTMAN PORTRAIT FILM NEGATIVE

By T. L. Halldorson
Middle Atlantic States Convention



DEMONSTRATIONS AT BALTIMORE

The recent war-time convention of the Photographers' Association of the Middle Atlantic States, held in Baltimore, was a great success. Our illustrations show the results of several of the demonstrations which were of unusual interest.

The first demonstration was one of pictorial photography, made by Mr. Eugene Hutchinson of Chicago, three of the results being shown in our illustrations. Following Mr. Hutchinson, Mr. W. O. Breckon of Pittsburg gave an interesting talk and demonstration of home portraiture. While Mr. Breckon uses film in his home portrait work, he was furnished with plates for this demonstration, and we regret very much that the negatives sent us were broken in transportation and we are therefore unable to show the results of his work.

Miss Emma Gerhard of St. Louis gave an interesting demonstration, the results being shown in two of our illustrations. Her method of posing the subject and handling the draperies, to give an indication of life and action, is of genuine interest. With a needle and thread it took but an instant to catch the hem of the skirt at one or two points, and with a second person to hold the thread, the effect of movement is made most realistic.

Mr. T. L. Halldorson of Chicago made an interesting flash-light demonstration on Portrait Film, the quality of this material being especially suited to such work. The harshness or contrast given by glass plates in flash-light work is entirely overcome by the use of film, the drapery and flesh tones being soft but brilliant, as shown in the results of Mr. Halldorson's demonstration.



SODIUM BISULPHITE

Until shortly after the beginning of the war Potassium Metabisulphite was the only preservative recommended for the Pyro Developer. It was perfectly satisfactory and, until that time, plentiful and reasonably cheap.

Soon afterwards it not only became scarce but expensive as well because of its scarcity. A substitute had to be found and this was Sodium Bisulphite. The forms of Sodium Bisulphite regularly supplied for other purposes, however, had certain objectionable features that it was necessary to overcome, one of these being a considerable content of iron.

While not objectionable in many of its uses this, however, made it out of the question as a preservative for photographic solutions. It is also necessary that it be free from bisulphate which



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By Eugene Hutchinson
Middle Atlantic States Convention





STUDENT Soldiers of the U. S. A. School of Aerial Photography in battalion formation on the Kodak Park Athletic Field, which is also their drill ground. Their work is most important, they



have made good in their training and these and many more like them will make good over there. The photographic profession may well be proud of their representatives in this branch of the service.

is the oxidation product of bisulphite.

As a consequence we made special arrangements to manufacture our own Sodium Bisulphite and, in our process of manufacture, to entirely eliminate the iron, making our production in every way suitable for photographic purposes and, as a preservative, fully as suitable as Potassium Metabisulphite.

This additional operation in manufacture may in some instances cause our price to be two or three cents a pound above the average price, but the chemical is that much better. The soda containing iron is positively detrimental to the keeping quality of photographic solutions, as is deteriorated bisulphite containing *sulphate*. And as this chemical is soon to have still further use as an important ingredient of fixing baths, we suggest that you make sure of results by specifying C. K. Co. Tested Sodium Bisulphite when you order.



Nothing interests a soldier more than news from home. Read the copy on page 7 and advertise to get the business of those who should be sending pictures to their soldiers.



SUBSTITUTE FOR ACETIC ACID FIXING BATH

In order to keep a fixing bath from discoloration and from staining the material fixed in it, it is necessary that the bath should be acid, and since developer is always carried over into the fixing bath with prints or films, it is necessary that a considerable amount of acid should be present in the fixing bath in order to neutralize the alkaline developer carried over. Unfortunately, hypo is decomposed in the presence of strong acid, the hypo being converted into sulphite and free sulphur, and this sulphur which appears as a milky precipitate in the fixing bath is injurious to prints.

This change of hypo into sulphite and sulphur is reversible, that is to say, if we boil together sulphite and sulphur we can get hypo, so that while acids free the sulphur from the hypo, sulphite combines with the sulphur to form hypo again. Consequently, we can prevent acid decomposing hypo if we have enough sulphite present since the sulphite works in the opposite direction to the acid. An acid fixing bath therefore is preserved from decomposition by the addition of sulphite.

Now, acids are of various chemical strengths. Sulphuric acid is a strong acid, and a small quantity of it will liberate the sulphur from the hypo, but acetic



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acid is a chemically weak acid, and a good deal of acetic acid can be added to a fixing bath without any sulphur being liberated. The reason, therefore, for using acetic acid in fixing baths is that it forms a sort of reserve of acid which can neutralize a large amount of alkali carried over from the developer. By using acetic acid with sulphite we can make a fixing bath containing a large amount of chemically weak acid which can neutralize the alkaline developer but which is not strong enough chemically to precipitate sulphur from the hypo in the presence of the sulphite.

At the present time there is a great shortage of acetic acid owing to its use for military purposes and it is necessary to find a substitute. Citric acid can be substituted, but it is more expensive and the supply is insufficient to replace all the acetic acid which has been used, so the only substitute which appears to be available is bisulphite.

Bisulphite will not decompose hypo provided that it is pure. It makes a satisfactory acid fixing bath, but, unfortunately, it does not give as good a reserve of acid as acetic acid does. As a consequence a fixing bath made up with bisulphite and alum will become milky after some quantity of developer has been carried over into it and it has lost its acidity. At the first glance this milkiness looks like sulphur, but the pre-

cipitate is basic aluminum sulphite and is due to the fixing bath losing its acidity.

In order to avoid this precipitation the only satisfactory method is to use some other hardening agent than alum, and for this purpose the use of chrome alum is suggested. Chromium does not precipitate as easily as the aluminum and will remain clear even when appreciably alkaline. A bath without acetic acid recommended for fixing prints is made up as follows:

Water	64 ounces
Hypo	16 ounces

When dissolved add the following solution:

Chrome Alum . .	100 grains
Sodium Bisulphite	1 ounce
Water	5 ounces

Quickly but thoroughly rinse prints in fresh water, immediately after developing and before placing them in the fixing solution. Fix for about ten minutes, during which time prints should be well separated to receive uniform action of the solution.

Exhaustion of the Chrome Alum bath will be noticed when prints lose a certain leathery feeling and appear slimy to the touch. When this condition is present, the bath should be discarded and a fresh one prepared.

Our Research Laboratory is at present working on a similar tank fixing bath for films which we hope to publish before long.



ARTURA PRINT, FROM AN EASTMAN PORTRAIT FILM NEGATIVE

By Eugene Hutchinson
Middle Atlantic States Convention



AVOID FIXING BATH TROUBLES

Due to a greater use of Hypo in several of the industries there has been a trifling advance in the price of this most essential photographic chemical, but this of itself should not be a sufficient reason for anyone to stint the fixing of prints or plates, though one of our correspondents has suggested such a possibility.

One would have to be a wizard to be able to say, merely by the process of inspection, how near to exhaustion any particular fixing bath might be. It can't be done, so we suggest that a method be used to keep account of the number of prints fixed in a given amount of bath, or better still, that only the amount of bath necessary to fix a given number of prints be made up at one time and the bath discarded when the batch has been fixed.

Some readers will immediately say that it takes too much time to prepare a fresh bath daily—but does it? Acid hardener may be made up in any quantity, and keeps indefinitely in a well stoppered bottle. With such a stock solution the hard part of making up a fixing bath is the dissolving of a pound of Hypo in sixty-four ounces of water. Some may contend this is too much trouble, but surely the careful worker will not. To him, good results are the all important thing.

Sixty-four ounces of solution will fix two gross of cabinet size prints or one-half gross 8 x 10. It is quite safe to figure a gross of 8 x 10 prints to the gallon of bath, and surely this is not expensive. If you must make up a given amount of bath, keep an account of the prints fixed in it and don't over-work it.

An advantage of the fresh bath in hot weather is that the temperature of the solution is materially reduced as the Hypo crystals dissolve, and this advantage is lost once the bath has become warm. It soon becomes a toning bath. You may have had prints begin to tone in a warm fixing bath and you know that the loss of even a few prints, and the time and trouble of making them over, is much more expensive than making a fresh bath and being sure that every print you deliver is a perfect one.

You have no means of judging how fast the fixing action takes place in a print or when the hypo in the bath has become used up and fixing stops. You can get some idea of the condition of a paper fixing bath by noting the time it takes for an unexposed plate to clear in it, but even this will not tell you whether or not it will properly fix any given number of prints.

When you are in doubt, use a fresh bath and be certain of results.



Dad knows something of war from experience, so, safe to say, there will be pictures a plenty for his boy's pocket.

Your photograph for your soldier.



Make the appointment to-day

THE PYRO STUDIO

Line cut No. 252. Price, 50 cents.

THE ONLY CONDITION

We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first*. C. K. CO., LTD.

Specify "C. K. Co. Tested"
when you order chemicals.
It's the easy way to elimin-
ate chance—to make sure of
proper chemical results.



Look for the seal on the container.

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

\$3000 IN CASH

OFFERED AS PRIZES IN THE 1918

KODAK ADVERTISING COMPETITION

FOR PICTURES SUITABLE
AS ILLUSTRATIONS IN
KODAK ADVERTISING

Class A is open to Professional Photographers only, with cash awards totaling \$2000

Write for Circular giving Complete Details.

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

Contest closes Oct. 20, 1918.

TOZOL

The Complete Developer for Photographic Papers.

We recommended Tozol before the war.

It's the same to-day, it is the logical developer for Artura, Azo and Velox papers, and your dealer can supply you.

The genuine is always better than the best substitute.

THE PRICE

1 oz. bottle	\$ 1.10
$\frac{1}{4}$ lb. bottle	4.00
$\frac{1}{2}$ lb. bottle	7.75
1 lb. bottle	15.00

Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.

Eastman "Four-in-One" Groupers

make group arrangement easy. The four stools, ranging in height from twelve to twenty-four inches, nest together in the space of the largest stool.

They are ready to use when wanted—out of the way when nested. Made of solid oak, finished in mission style.



Write your dealer for prices.

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'

Seven by Eleven

A new size of the right proportions for groups, landscapes, architectural and other subjects.



Eastman View Camera No. 2

7 x 11

For either vertical or horizontal subjects, the proportions of the 7x11 picture are better than those of the 8x10. Especially suitable for groups, architectural subjects and landscapes. The pictures look larger and sell better, yet the material costs no more.

The 7x11 Eastman View Camera No. 2 has a swing of unusual latitude, a $6\frac{1}{4} \times 13\frac{1}{2}$ front board and a sliding arrangement which permits the lens to be centered on either half of the film or plate when making two exposures on a 7x11. This camera is an improved model of the Empire State and Century View and embodies every practical convenience.

THE PRICE

Eastman View Camera No. 2, 7x11, with
case and one Plate Holder \$55.00

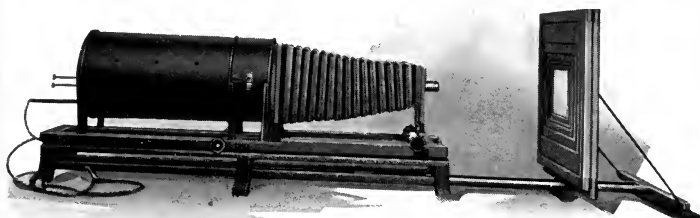
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All Dealers'.

Make Enlargements

It's your business—and it should be a very profitable business. But until you are equipped to make enlargements as simply as you make contact prints you will not make the most of it.



The Eastman Enlarging Outfit

is a thoroughly practical and complete equipment for enlarging from 5 x 7 and smaller negatives. It is fitted with 10-inch condensers, 500 watt lamp, revolving negative carrier and adjustable easel with kits for all standard size paper as well as lantern slides. It is compact, inexpensive to operate and contains practical features found in no other similar apparatus. Detailed description will be mailed on request.

Price, without lens, \$100.00, f. o. b. Rochester.

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.

Make your dark-room safe.

The Kodak Safelight Lamp



An adaptation of the Wratten Safelight Lamps, equally efficient, but smaller in size. As with the Wratten Lamps, is constructed only for electricity and is furnished with electric socket, cord and plug, but without electric globe.

Series 2 Safelight furnished with lamp.

Kodak Safelight Lamp, complete as above . \$4.00

Extra Safelights, 5 x 7, any series, each60

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Get the enlargement business.
If contact prints will sell

ARTURA CARBON BLACK

enlargements with contact print
quality will also sell. You can
duplicate the surface, tone and
texture, as well as the quality
of the contact print on Artura
Carbon Black.



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FROM AN ARTURA IRIS PRINT

Charles Brandenburg
New York, N. Y.



STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

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No. 5

YOU CAN HELP

The National War Work Council of the Y. M. C. A. asks you to help furnish enjoyment and relaxation for our men in the camps and fighting zone.

You can't very well donate a motion picture play or a bit of vaudeville, but if you happen to have a set of lantern slides that are interesting you can and will do your part if you box them up and send them at once, prepaid, to Mr. J. A. Rawson, Jr., National War Work Council, Y. M. C. A., 347 Madison Ave., New York, N. Y.

Lantern slides are kept working continuously, are shipped from hut to hut, and from camp to camp and to the camps overseas until the slides you donate have been seen by a couple of million of men, all of whom are hungry for these pictures of familiar home scenes.

Of course, we wouldn't advise you to send slides of purely per-

sonal interest, such as the picture of Hank Peter's new barn, or anything of that sort, but lantern slides are usually made of subjects of general interest.

Whether these pictures be of Maine or of California, or North Dakota or of Georgia, they are wanted. And if they can be had from every state in the union, so much the better.

To the men who see them they will be home scenes, but to make them of greater general interest they should have titles. With titles, the slides may be readily grouped and made into travel lectures, the titles being read by the operator as the pictures are thrown on the screen.

You can readily imagine how the Frisco boys in France will feel when a good picture of Market Street, or the Ferry Building, or the Golden Gate, or any one of a thousand familiar California scenes is thrown on the screen in their Y. M. C. A. hut.

The same will be true of the

boys from your section. Familiar scenes will carry a message of cheer to the boys from Indiana or Texas—from New York or Minnesota. Get your lantern slides together and send them at once—or if you have the negatives and not the slides, make them. Warmth for the hearts and minds of our men is needed as urgently as warmth for the body.

While mother and sister are knitting for the Red Cross, do your part by getting together all the interesting material you can find to keep the boys over there happy and to let them know you have their welfare at heart.

Send the slides, prepaid, with a note stating by whom they are sent, and you can be sure they will do much toward helping a million or so men to pack up their troubles during some of their rest or recreation periods.



“The Photographer in your town” advertising is going strong in the July magazines. Connect up with it in your local papers and get the business coming to your studio.



HIGHLIGHT QUALITY OF FILM NEGATIVES

The difference between really good and merely ordinary portrait work will usually be found in the quality of the highlights. Just as the spot-light, turned on some one performer, makes that individual the center of attraction, so should the highlight of the portrait contain something of quality to make it the center of attraction.

In portraiture the highlights are so placed as to center interest on the face, for it is the character of the face that receives the most of the artist's attention. If the attention wanders from the face, the composition of the picture should be such that attention is brought back to that point, but a *mere* highlight—a blank white space, will not hold interest. There must be something of interest in the highlight area.

The first purpose of the highlight is to attract attention, the second purpose, to indicate form. If an object has roundness, and is lighted from a single source, a highlight will appear on the point nearest the light and this will gradually blend into the shadows giving, on the flat surface of the picture, an indication of roundness. If the object is flat it will be uniformly lighted and will appear flat.

To secure the effect of roundness the light must be properly



FROM AN ARTURA IRIS PRINT

By Charles Brandenburg
New York, N. Y.



directed. A round object can be made to appear flat by lighting it equally from all sides.

Once the subject is properly lighted correct exposure of the photographic film or plate is of next importance. The negative should correctly represent the values of lights and shadows of the subject, by which we mean that if the highest light is twenty-five times as bright as the deepest shadow, the negative should show the same contrast.

No sensitive material will reproduce the same range of contrast in an under-exposure as in a correct exposure. It's much the same as starting a motor. A given amount of power does not produce a proportionate number of revolutions per second in starting as additional power produces when the motor is running at good speed.

After the range of under-exposure is passed there is a stretch of latitude in which contrast increases proportionately with exposure. If two seconds is the shortest correct exposure, a certain contrast between highlights and shadows is produced which corresponds with the contrast of the lighting of the subject.

If three, four, five, six, seven or eight seconds exposure will increase the density of the negative proportionately in shadow and highlight, the range of contrasts remaining exactly the same, then any exposure from two to

eight seconds will be correct and will represent the latitude of the film or plate used.

Then comes the period of over-exposure in which the contrasts begin to flatten out. This is because a highlight can become just so opaque and no more. Increased exposure will gradually increase the densities of the half-tones and shadows until finally all contrast is lost and the negative becomes entirely opaque.

There should be considerable gradation within a highlight. It should have texture and form—should represent something. It is readily seen that under and over-exposures each destroy highlight quality, also that great latitude in sensitive material enables the photographer to secure a greater percentage of correct exposures in which highlight quality is preserved.

The speed of Eastman Portrait Film is such that the danger of under-exposure and the resulting poor highlight quality is minimized.

The latitude of Eastman Portrait Film is so great that practically any range of contrast may be truthfully reproduced, while with the average range of contrast of portrait lightings, the scale of the film is so long that exposures up to four, five or six times normal may be made without loss of quality in highlights or shadows.

Speed and latitude are im-



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portant aids to correct exposure and much of the quality of highlights depends upon correct exposure. Development also plays an important part, though there is little excuse for over or underdevelopment of a properly exposed negative. Of greatest importance in preserving highlight quality, however, is the non-halation property of film.

The quality of a sensitive emulsion has everything to do with correct reproduction, but the slightest amount of halation will destroy highlight quality.

Eastman Portrait Film will reproduce the most brilliant lightings and is sufficiently non-halation to retain all the brilliancy. This explains film quality—accounts for the superiority of films over plates.

Highlights should have form and texture—should be made up of points of light with intervening shadows. But wherever a point of light strikes the emulsion of a glass plate it not only goes through but is reflected back. As it has the thickness of the glass in which to spread it is readily seen that this reflected light destroys those very small shadows which give detail and brilliancy in a highlight.

Because this halation is something you do not see it is none the less real. Because you may never have had negatives with the brilliant highlights that Portrait Films produce, is no reason

for not adding this quality to your work.

Portrait Films will enable you to make better negatives at no greater expense.



P. A. OF A. WAR WORK

The officers of the Photographers' Association of America have inaugurated a membership campaign for the upbuilding of the National Association, with the idea of making its organization strong enough and sufficiently representative of the profession to successfully carry out some definite plan of war work.

It is hoped that the association may gain such strength of members that it may be of real service to every photographer who has been called to the colors or to dependents who have been deprived of his support. The first step in the right direction was taken when the P. A. of A. decided, as a war measure, that it would not hold a National Convention until America wins the war.

With conventions out of the way the road should be clear for the formulating and carrying out of some definite and logical plan of war work that would interest every photographer in the country sufficiently to secure his unselfish support.

At such a time as this the individual should not think of the



FROM AN ARTURA IRIS PRINT

By Charles Brandenburg
New York, N. Y.



benefit he can derive from a professional association, but of the service he can help his association give to others.

There are undoubtedly scores of broad minded and unselfish photographers in the country who will be willing to give of their best thought and their time to formulate and to administer the affairs of any worthy and logical war plan that may be devised. And if the photographer can be assured that his membership fee will be used in a patriotic and humanitarian cause, the association should register close to 100% membership.

Such a campaign would receive the greatest amount of publicity and the most generous support. And while its aim would be to expend all its funds in a worthy cause, it would remain so rich in experience and so strong in good will that *when we win this war* it would be able to begin its life anew with higher aims, loftier purposes, and the united support of every loyal American photographer.

We hope the National Board and its War Work Committee will decide upon some such broad plan that everyone interested in photography and the war will be glad to help it carry on.



*Watch the work of the man
who uses Artura.*

SOFT FOCUS WORK

S "What is there to soft-focus portraits?" asked a photographer in a recent discussion of photographic methods. "I have seen examples of soft-focus work that were good and more that were bad," and he was quite right in both statements. Soft-focus portraits of quality are made by some workers and very poor attempts are often made by others, with discouraging results.

The first thing to be considered in attempting such work is whether or not it will appeal to your patrons. It certainly will not to the majority of people who have portraits of their children made every year as a matter of record. And there is the same likelihood that such work will not appeal to those who have portraits of themselves made once in five or ten years as a matter of record to please their family, friends and relatives.

A familiar landscape that you have come to know so well that every detail is firmly impressed upon your memory may seem much more beautiful to you on a hazy morning. Every familiar object is present, the lights and shadows are in their accustomed places but the detail is missing—something is left to your imagination, and to you, the landscape has a peculiar beauty that you can appreciate.

The same may be true of the



FROM AN ARTURA IRIS PRINT

By Charles Brandenburg
New York, N. Y.



portrait of a very dear friend. There may be other portraits with more fidelity to detail of feature, more map-like in their accuracy of drawing and equally pleasing in expression, but the portrait with the soft lines, well modulated shadows and opalescent highlights will make a stronger appeal to your imagination and possess a quality that you can readily appreciate.

But beware of trying to sell such work to the patron who wants sharp, clean-cut photographs, full of detail. He knows what he wants, and if you want his dollars you must give him what he wants in return. It isn't likely that he will willingly part with his money as tuition for an art educational course of your selection.

You have seen examples of soft-focus work that were good because the men who made them put the same quality into this work that they put in straight portraiture. The lighting must be just as good—the expression, especially characteristic, and the modeling, if anything, stronger than for ordinary work to allow for the softening effect of the lens.

The mistake is often made of thinking that careful balancing of the light is unnecessary so long as some wierd and fantastic effect is secured. The result is nothing more than wierd and fantastic. If you have been tempted to

make soft-focus work and your results have been nothing more than fuzzy, your failure may be due to a lack of knowledge of your lens and nothing more.

In many soft-focus lenses the softness is secured by the use of two common defects, spherical and chromatic aberrations. The result is that the degree of sharpness you see upon the ground glass is not secured in the negative. This is due to the fact that one focuses the colored rays, that are most plainly visible to the eye, on the ground glass, while the more actinic rays are in focus at a point in front of the ground glass. As the actinic rays record the image, or a greater portion of it, the result is a negative that is much more fuzzy than one would expect. For example, if the eye of the subject were the sharpest point on the ground glass, the tip of the nose would be the sharpest point in the negative and the eyes would be fuzzy. It is seen then that in using a lens with chromatic aberration that allowance must be made for this error by focusing back of the plane you wish to have the greatest sharpness, say on the ears, which will give you a negative with the greatest sharpness in the plane of the eyes.

If you merely wish to experiment with soft-focus work it is the safest plan to make sharp negatives and secure the softness in printing or enlarging. A fairly



FROM AN ARTURA IRIS PRINT

By Charles Brandenburg
New York, N. Y.



thick piece of celluloid between the negative and the printing paper will materially soften the result, while a very fine mesh of screen in front of the lens, with a hole in the center about the size of an f.32 stop, will give a pleasing soft result in the enlargement.

The important thing to remember is that softness of itself is not a quality—does not make a good result from a poor one and will not cover up mistakes in lighting, posing, exposing, or other operations that require skill in negative making.



NEW GOODS

The Eastman Developing Box No. 4 is a new size made specially to accommodate 7 x 11 plates or films in Core Racks or Film Developing Hangers but as it will also take 5 x 7 racks or hangers it answers a double purpose.

The developing box is made of hard rubber, the price is \$6.00 at your dealers'.

The Core Plate Developing Rack may now be had in the 7 x 11 size at 75 cents each. If you are using 7 x 11 plates or films this new developing box will be found a great convenience.



ADAPTER BACKS

Many photographers have found a considerable advantage in the Adapter Back for the studio camera over curtain slide holders and the automatic attachment.

The Automatic Cabinet Attachment allows the operator to slide his plate into position for exposing very quickly after the image has been properly focused, but necessarily the curtain slide holders used with this attachment carry but one plate.

The Reversible Adapter Back is in no sense automatic but it permits the photographer to use the ordinary double plate or film holder, and almost every studio has a number of such holders.

It is a convenience to use one type of holder in either studio or view camera but the special advantage to the studio operator is that the same number of view holders will hold twice as many plates as the curtain-slide holders, enabling him to make a greater number of exposures without reloading his holders.

Reversible Adapter Backs for Century Studio Cameras fit an Adapter Frame which, in turn, attaches to the back of the camera.

If you have an 8 x 10 studio camera and wish to equip it with 8 x 10, 6½ x 8½ and 5 x 7 Adapter Backs it is only necessary to have one Adapter Frame as

the three backs are interchangeable in the one frame.

The price of the Adapter Back includes one plate or film holder.

REVERSIBLE ADAPTER BACKS FOR CENTURY STUDIO CAMERAS

11 x 14 — 11	x 14	. .	\$19.00
11 x 14 — 8	x 10	. .	15.00
11 x 14 — 6½	x 8½	. .	14.50
11 x 14 — 5	x 7	. .	14.00
8 x 10 — 8	x 10	. .	14.00
8 x 10 — 6½	x 8½	. .	12.00
8 x 10 — 5	x 7	. .	12.00

ADAPTER FRAMES FOR FITTING REVERSIBLE ADAPTER BACKS TO STUDIO CAMERAS

11 x 14	\$5.00
8 x 10	4.00

Above prices are f. o. b. Rochester, N. Y.

When ordering from your dealer, give name and number of camera you wish Adapter Frames to fit.



Film overcomes the halation you see in a plate negative as well as the halation you don't see—halation which nevertheless destroys highlight detail and half-tone gradation.

Use Eastman Portrait Film

and get all the quality of your lightings in your negatives.



A COOLING DEVICE

The temperature of your developer is of such vital importance that the difference of ten or fifteen degrees will mean the difference between a good and a bad negative.

In hot weather we become so accustomed to high temperatures that it is difficult to judge when a solution is right for developing.

If the temperature of your dark room is 100° and your developer 80° it seems much cooler than it really is and you may think it unnecessary to use a thermometer.

Don't guess—don't take a chance when with so little trouble you can be sure of the temperature and take measures to put it right for developing.

Tap water is usually cool enough for developing except in localities where the heat is unusual in summer. When the tap water is cool enough to reduce the temperature of a tank of developer, a very simple and inexpensive apparatus can be made to use this method of cooling.

A tank of galvanized iron is made in which the developing tank can be placed, the principle being the same as the double boiler in which your wife cooks her breakfast cereal. The Eastman Developing Box, which is made of hard rubber, has a collar or lip around the top, and most developing tanks are of



FROM AN ARTURA IRIS PRINT

By Charles Brandenburg
New York, N. Y.





FROM AN ARTURA IRIS PRINT

By Charles Brandenburg
New York, N. Y.



similar construction. The cooling tank should be made enough larger than the developing tank to allow a two-inch water space on the four sides and bottom.

In constructing this tank, two inches of the sides and ends are crimped or turned over, making the opening in the top two inches smaller all around than the outside of the tank. The opening should be just large enough for the developing tank to drop through to the lip of the tank which should rest on the edges of the opening.

A small tap is placed in one end of the tank at the bottom to which a rubber tube from the tap over your sink can be attached. A hole in the same end but at the top of the tank allows the water to overflow after it has circulated around the inner tank. In building such a cooling tank the metal on top should be folded over to form a double thickness and soldered together firmly so it will stand the weight of the developing tank resting on it.

By trial, developer in a tank at a temperature of 85° has been reduced 20° in half an hour with a small stream of water from the tap. It is readily seen what an advantage such a tank will be in hot weather and how a small amount of ice can be broken up and used with excellent results when the tap water is not, of itself, sufficiently cool.

The great advantage is in applying the cold water to all four sides and the bottom of the tank and in keeping the hot air away from all but the top.

If the construction of such a cooling device has not been made perfectly clear we will be glad to furnish a drawing from which your tinsmith can work.



A REQUEST FROM THE WAR DEPT.

Practically every citizen of the United States is willing and anxious to do something to help win the war.

The Military Intelligence Branch of the War Department wishes your co-operation in obtaining all the photographs it is possible to secure of those parts of Belgium and France that are now occupied by German forces.

If you have such pictures, they are wanted. If you know of any one who has been in France or Belgium previous to the present war who has a collection of pictures made in that territory now occupied by the Germans, will you please make an effort to have such pictures sent at once to Lt. Col. A. B. Cox, General Staff, 1156 Fifteenth St. N. W., War Department, Washington, D. C.

We can not say for what purpose these pictures are to be used but you can be sure there is a very good reason for wanting



FROM AN ARTURA IRIS PRINT

*By Charles Brandenburg
New York, N. Y.*



them or the request would not be made.

Reach everyone you can who may have such pictures. Ask them to give data with each picture so that the objects pictured may be as definitely located as possible, and give specific instructions for sending same to the address given above.

The effort is being made to secure the pictures wanted by the War Department through the photographers of the country and we hope that every photographer will show the right spirit by making it his business to see that there is a hearty response to this request. We can assure you that your generous action will be highly appreciated.



CHANGES

The manufacture of the Eastman Studio Dark Room Lamp has been discontinued. The Kodak Safelight Lamp is still available, having to a considerable extent superseded other dark room illuminants.

PHOTONOTES: Double Weight Azo E stock, in the form and style of correspondence cards, are now the same price as Azo Post Cards, and the same charges apply to special imprinting.

Cirkut Film may now be had in rolls of 8" x 5' for the Cirkut Camera, not for the Cirkut Outfit, at \$1.60 per roll.

Below we show the latest prices on Eastman View Cameras:

No. 1—With Case and Holder

Size	Price
5 x 7	\$35.00
6½ x 8½	38.00
8 x 10	41.00

No. 2—With Case and Holder.

Size	Price
5 x 7	\$48.00
6½ x 8½	50.00
8 x 10	55.00
7 x 11	60.00



OUR ILLUSTRATIONS

Mr. Charles Brandenburg is probably one of the youngest photographers on Fifth Ave. That he is successful is understood for he has established an excellent business and by his progressiveness, holds the prestige he has gained.

As a boy he had a natural bent for drawing and painting, so after a modest Art education he decided to enter a profession which would give him an opportunity to use this talent.

A position in a Fifth Ave. studio gave him the opportunity to gain valuable experience in practical work. With this experience and an influential friend as a partner his venture in business for himself proved so successful that after two years he was able to open a studio for himself on Fifth Ave.

This seems a very simple thing in the telling, but it is, in real-



FROM AN ARTURA IRIS PRINT

By Charles Brandenburg
New York, N. Y.



ity, a very remarkable achievement. To enter a studio as an apprentice at twenty-three, open a studio on New York's most exclusive thoroughfare at thirty and to still be there at thirty-four, with every prospect of continued success, is a record of which any photographer might justly be proud.

No matter how proficient a man may be in some chosen line of work he generally finds himself lacking in some of the elements that enter into the make-up of a successful business man. Mr. Brandenburg did not lack in ability as a salesman but felt keenly the need of a deeper insight into human nature if he was to make work out of the ordinary. He read much on psychology, physiognomy and the application of these, and kindred subjects, to art and, by the use of the knowledge gained, found that the character of his work was greatly improved.

His method of removing lines and wrinkles is based on changing the state of mind that produces them. There is nothing new in the theory—it is merely a clever process of mental suggestion, used by every man who is accredited with having a pleasing personality, by which a pleasing, natural and characteristic expression and pose are secured without the use of "look pleasant, please," and similar antiquated studio methods.

PERCENTAGE SOLUTIONS

The calculation of percentage solutions is often a puzzle to young assistants and as there are many new ones being broken in at the present time, a word of explanation may not be amiss. See that your assistants read this and similar matter as it appears in the various photographic magazines.

The difficulty about percentage solutions will disappear if the worker will always bear in mind that one fluid ounce of water weighs $437\frac{1}{2}$ grains which is, of course, equivalent in weight to one ounce avoirdupois. It follows that if one-tenth that number of grains—i.e., 43.75 grains—of any ordinary soluble chemical is put into a graduated glass and water added to make up one fluid ounce, the result will be a 10% solution.

In the following table the figures are worked out for solutions of various strengths. If the number of grains indicated in the table are taken and sufficient water added to make up one fluid ounce, it will be found that the solution has the required strength.

For a	1% solution take	4.37 grains	
"	5%	"	21.87 "
"	10%	"	43.75 "
"	20%	"	87.50 "
"	30%	"	131.25 "
"	40%	"	175.00 "
"	50%	"	218.75 "





THAT picture
you are going
to send him. He
will wear it next
his heart, it means
that much.

*Make
the appointment
to-day.*

THE PYRO STUDIO

Line cut No. 253. Price, 50 cents.

THE ONLY CONDITION

We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first. C. K. CO., LTD.*

To the People of Germany they said:



The illustration shows a pamphlet signed by the Association of German Amateur Photographers' Societies and dated Berlin, October, 1917. It is reproduced from a photographic copy lately received in this country. The translation in full is given on opposite page.

— *If it isn't an Eastman*
it isn't a Kodak!

A translation of the circular in full is as follows:

“It is the duty of every German to use only German products and to patronize thereby German industry. Therefore, use for photographic purposes only German cameras, German Dry Plates and German papers. Whoever purchases the products of enemy industries strengthens the economic power of our enemies.

“Germans! Remember for all times to come that with the aid of your patronage the American-English Kodak Co. subscribed before the war with the United States, the round sum of 50,000,000 marks of war loans of our enemies!

“There are no German ‘Kodaks’. (‘Kodak’ as a collective noun for photographic products is misleading and indicates only the products of the Eastman Kodak Co.) Whoever speaks of a ‘Kodak’ and means thereby only a photographic camera, does not bear in mind that with the spreading of this word, he does harm to the German industry in favor of the American-English.”

If it isn't an Eastman it isn't a Kodak!

EASTMAN KODAK COMPANY
Rochester, N. Y. *The Kodak City*

Specify "C. K. Co. Tested"
when you order chemicals.
It's the easy way to elimin-
ate chance—to make sure of
proper chemical results.



Look for the seal on the container.

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

\$3000 IN CASH

OFFERED AS PRIZES IN THE 1918

KODAK ADVERTISING COMPETITION

FOR PICTURES SUITABLE
AS ILLUSTRATIONS IN
KODAK ADVERTISING

Class A is open to Professional Photographers only, with cash awards totaling \$2000

Write for Circular giving Complete Details.

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

Contest closes Oct. 20, 1918.

TOZOL

*The Complete Developer for
Photographic Papers.*

We recommended Tozol before
the war.

It's the same to-day, it is the logical
developer for Artura, Azo and
Velox papers, and your dealer can
supply you.

The genuine is always better
than the best substitute.

THE PRICE

1 oz. bottle	\$ 1.10
$\frac{1}{4}$ lb. bottle	4.00
$\frac{1}{2}$ lb. bottle	7.75
1 lb. bottle	15.00

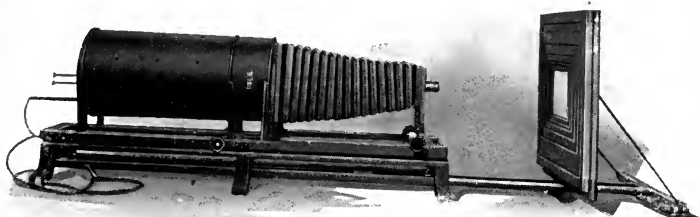
Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.

Make Enlargements

It's your business—and it should be a very profitable business. But until you are equipped to make enlargements as simply as you make contact prints you will not make the most of it.



The Eastman Enlarging Outfit

is a thoroughly practical and complete equipment for enlarging from 5 x 7 and smaller negatives. It is fitted with 10-inch condensers, 500 watt lamp, revolving negative carrier and adjustable easel with kits for all standard size paper as well as lantern slides. It is compact, inexpensive to operate and contains practical features found in no other similar apparatus. Detailed description will be mailed on request.

Price, without lens, \$100.00, f. o. b. Rochester.

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.

Make your dark-room safe.

The Kodak Safelight Lamp



An adaptation of the Wratten Safelight Lamps, equally efficient, but smaller in size. As with the Wratten Lamps, is constructed only for electricity and is furnished with electric socket, cord and plug, but without electric globe.

Series 2 Safelight furnished with lamp.

Kodak Safelight Lamp, complete as above . \$4.00

Extra Safelights, 5 x 7, any series, each . . .60

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

The Improved
Sky Scraper Camera



Designed to photograph tall buildings and other subjects where great rise in front, and excessive swing back, are necessary.

The front may be raised until the optical axis of lens is above the top of the film or plate; the lens board is square, with lens fitted above the center, permitting reversal of board in any direction—especially valuable features when working in cramped positions.

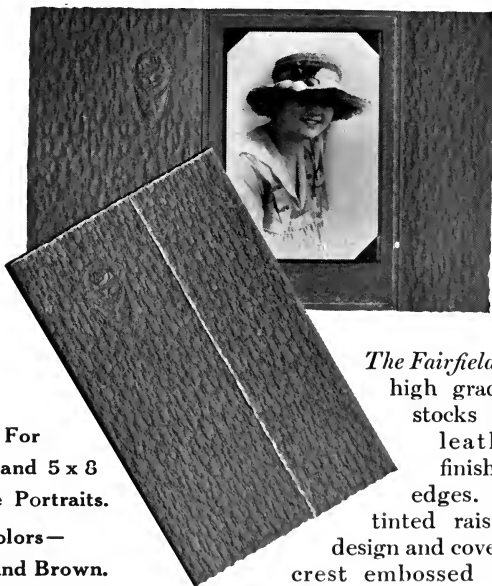
Ask your dealer for professional catalogue

Folmer & Schwing Department

EASTMAN KODAK COMPANY

Rochester, N. Y.

STYLE FAIRFIELD



For
4 x 5 and 5 x 8
Square Portraits.

Colors—
Grey and Brown.

The Fairfield—Made of high grade duplex stocks with rich leather grain finish, deckled edges. Insert has tinted raised corner design and cover has neat crest embossed in upper left hand corner.

A popular "slip-in" corner style that will please your best customers.

SAMPLE MAILED FREE

MANUFACTURED BY

Canadian Card Co., Toronto, Canada.

PHOTOGRAPHIC MOUNTS
MADE IN CANADA

Now, more than ever before,
you should conserve time,
labor and material.

ARTURA

gives you the most of qual-
ity—the least of waste.



CANADIAN KODAK CO.,
LIMITED,
TORONTO, CANADA.

All Dealers'.



ARTURA PRINT FROM SEED PLATE NEGATIVE

*By Geister & Andrews
New York, N. Y.*



STUDIO LIGHT

INCORPORATING

THE ARISTO EAGLE · THE ARTURA BULLETIN

ESTABLISHED 1901

ESTABLISHED 1906

VOL. 10

AUGUST 1918

No. 6

ILLUSTRATING MERCHANDISE

In a recent copy of *Printers' Ink* a writer gives some very good suggestions for the commercial photographer on photographing merchandise for catalogue illustrations. The writer's experience will no doubt apply to many things which the commercial photographer is called upon to photograph, and as the psychology of selling is best understood by the salesman, the following should be of special interest to those photographers who make pictures that must sell the goods they illustrate:

"An executive in charge of a new department of an old mail-order house, a department of laces and embroideries, was talking with the editor of a business journal of the lace industry and asked, 'By the way, what do you find the best background for photographing lace?'"

"Well, we tried all colors, and after years of experimenting we've settled on a chocolate brown," said the editor.

The mail-order man smiled to himself. He had discovered and settled on the same color inside of *two days* at a total cost of *less than three dollars*! It was all in the trained way he went at the job. He took strips of cardboard of all colors, including black, measuring 2 x 6 inches, laid them out side by side, like the keys of a piano and glued them down. He then took two pieces of lace, one a coarse Cluny and the other a fine Val lace, and stretched them across the colored strips and pinned them down. He then had this lace photographed, with the result that with one shot of the camera he got a comparison of the same pieces and patterns of lace against all the possible backgrounds. The proof of the plate was shown to many girls and women with the request that they indicate at what point the pieces of lace showed up the clearest and gave them the best idea of what it looked like. Almost without exception they selected the spot, which, when looked up, was found to be over the chocolate-brown background. The natural supposition, among the uninitiated, would be that white lace should be shown against a black background, but this experiment showed that the lace seemed to sink into the black background, whereas it stood right out

on top of the chocolate background, so that it looked as though it could almost be picked up.

A VALUABLE THING TO KNOW,
FOUND OUT BY ACCIDENT

This test brought out another point about lace that required further experiment; it proved that to photograph lace actual size made it appear much wider and coarser than it really was. So to make the picture a truthful reproduction of the goods, and show it so that a woman could judge it correctly, it was found, after experimenting, that it had to be reduced about one-fifth or one-sixth.

Another mail-order house had difficulty in getting watches to look true to size. When photographed actual size they looked larger than they actually were, giving them a clumsy appearance. This is due to the fact that when the eye looks at a watch the effect of the light reflections on the rounded edges is such that the watch does not look as large as it actually is; whereas, when the case has been dulled with putty, or by whatever other means the dulling is done, the eye of the camera sees the watch full size and makes a flat picture of it. The house in question experimented persistently until it worked out the proper scale to photograph watches, a reduction of sixteen to fifteen, to make them look actual size.

If more attention were given to this side of the catalogue problem and less time were spent on elaborate retouching, until handkerchiefs, for instance, look as if they were made of tin, with scratches and nail punches for embroidery and eyelet work, sales sheets would have a healthier aspect.

Speaking of embroidery brings to mind the experience of one mail-order house in retouching embroidered handkerchiefs and napkins.

After spending many dollars on elaborate retouching and hand-tooling, without getting the desired result in the finished reproductions, the manager finally got disgusted one day, picked up a soft lead pencil and with it outlined the embroidery right on the handkerchief and photographed it, with the result that, without a cent spent on retouching the photograph or hand-tooling the plate, a reproduction was obtained that bettered anything the house had been able to get! People could *see* that embroidery, and that house never went back to the old method of retouching.

The manufacturers of a certain well known revolver found, as was reported in *Printers' Ink* some time ago, that there was one best angle at which to illustrate their revolver. They stumbled onto this fact after years of advertising and illustrating this revolver in magazine advertisements and catalogues. The expert mail-order man studies these things right away; he cannot afford to discover five years after he has added a new article or a new department to his catalogue that he has for years been falling short of the quantity of sales that he might have been enjoying all those years."



*Put the loud pedal on
quality and workmanship
and then live up to your
advertising.*

*Don't say, "I'll try Film
next season," use Eastman
Portrait Film now.*





ARTURA PRINT FROM SEED PLATE NEGATIVE

*By Geister & Andrews
New York, N. Y.*



NEGATIVE DRYING

In certain localities trouble in drying negatives evenly is experienced in cold damp weather, and even in the warmest weather when there is considerable humidity.

This trouble is often due to placing the negatives too close together in the drying racks, the result being a sharply defined edge to the portions which have not dried.

When negatives are left to dry over night and the studio is opened the next morning and the work rooms ventilated, the weather may have changed, the air cleared up and the portions of the negatives that remain damp dry very quickly with a marked difference in density and the drying mark mentioned above.

No after treatment has ever been found that would remove such a mark. If negatives have dried slowly in a closed room, close together in the racks, the only way to save them is to keep the room closed and allow them to finish drying under those conditions.

The best way to prevent drying marks is to dry the negatives quickly. All of the surplus moisture should be wiped from the front and back of the negative with a damp pad of cotton.

Negatives should be placed a couple of inches apart in the racks and once they have started

to dry in one room should not be carried into another. Or if drying has begun in a well ventilated room the room should not be closed later on and the rate of drying changed.

If the air is damp it is advisable to heat the drying room before the negatives are placed in it for drying. There will then be little chance of their not being dry by next morning.

Every studio should be equipped with an electric fan for quick even drying, the results being most satisfactory in every way. The time saved in drying negatives ready for proofing enables one to show proofs before the sitter's enthusiasm begins to wane, and orders are almost invariably larger.

Thin negatives are considerably intensified by quick drying and the combination of a fan and heat may be used to advantage in drying such negatives. Precaution should be taken to see that an inexperienced apprentice does not turn the negatives upside down in the racks once they have begun to dry.



*Watch the work of the
man who uses*

ARTURA





ARTURA PRINT FROM SEED PLATE NEGATIVE

By Geister & Andrews
New York, N. Y.



HOME PORTRAITURE —FILM RESULTS

The many requests for information as to the best way to make a beginning in home portraiture, the most approved method of advertising and the equipment to use, has led us to go into the subject at some length. Special stress is laid on the use of initiative, as great importance attaches to making the right start boldly, after which the good workman has plain sailing.—*Editor's Note.*

There are a great many capable photographers who would be doing a good home portrait business to-day were it not for timidity—a sort of stage fright, as it were, that makes them hesitate to make a beginning.

If you would enjoy swimming you must get in where the water is deep. Until you have made your plunge the water seems cold and you hesitate, but once under you feel fine and strike out boldly and with confidence.

"How am I to go about it—how can I get samples—what is the most dignified method of procedure?" These are the questions invariably asked by the man who wants to make home portrait work but hesitates.

The way to go about it is to *make* a line of samples, and this requires some sort of preliminary start—speculative, if you choose to put it that way, for it is the same as complimentary studio sittings, only the shoe is partly on the other foot.

In the one case you invite a sitter to the studio while in the

other you must seek an invitation to use the home for a sitting.

We have even been asked the question, "Where can I buy home portrait samples?" This would be unethical. A sample print is of no value unless it is a sample of *your* work. And your samples should be portraits of people well known in your own town.

No doubt you have a number of patrons with whom you are well enough acquainted to secure permission to make negatives in their homes. Suppose you do find it necessary to give away a few prints in your first attempts. You have used some one's home for your experiments and you have saved the cost of a model. If you make some good negatives and can use the prints as samples, you can count yourself ahead of the game and gaining experience. And possibly you can sell a few additional prints.

Once you have a nice line of samples you will find the rest easy. If your first work is successful you may not even have to look for your next sitting. As a rule one good piece of work immediately secures several more sittings for you. And so the ball starts rolling. The woman you please with portraits made in her home will show them to her friends because they are a novelty.

The well-to-do class should furnish two-thirds of the photog-



ARTURA PRINT FROM SEED PLATE NEGATIVE

*By Geisler & Andrews
New York, N. Y.*



rapher's revenue, but they don't buy photographs as they should. They have everything to make attractive pictures. They live in artistic homes, dress attractively, possess interesting personalities, appreciate the things that are refined and beautiful and have the money with which to enjoy life.

These people could come to your studio more easily than you can go to them, but they don't care to. Your studio work is commonplace to them. There is nothing about it that is distinctive—anyone can buy it.

They would buy photographs at high prices if they were sure they would be different from the rest. And the only way to be sure of this is to have them made in their own homes. Their discriminating taste has made them want pictures with the added note of home interest. And the fact that they can be given this special and individual treatment and that they must pay for the extra service makes them all the more willing. Photography ceases to be an ordinary commercial process just as soon as this note of home interest becomes a part of the picture.

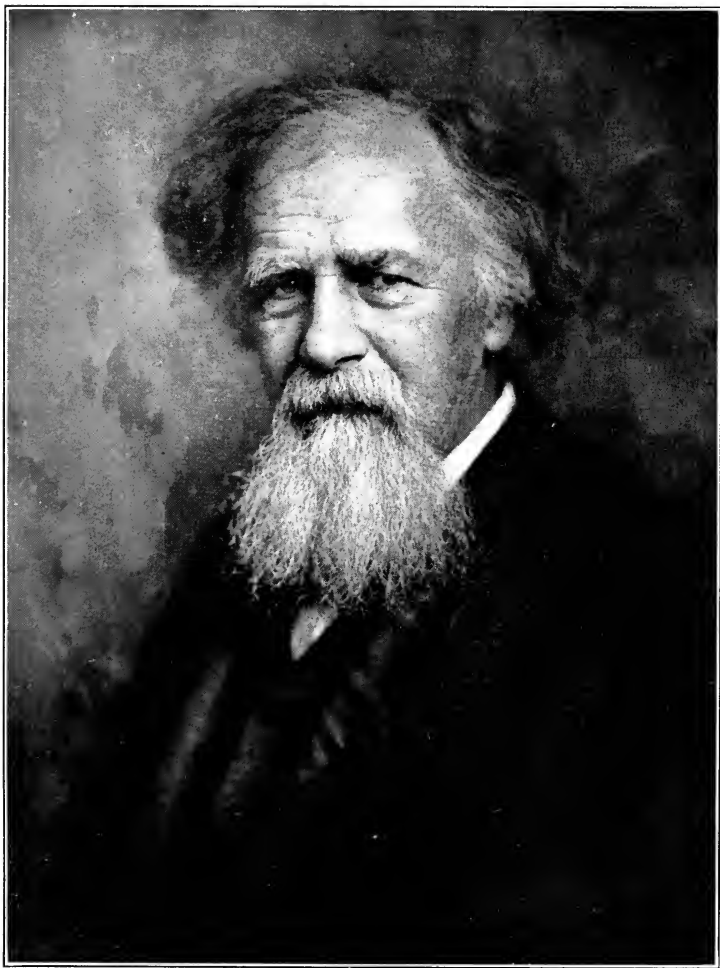
The more distinguished and influential the subjects you select for your sample work the more weight they will have with others from whom you wish to secure business. Mrs. White likes Mrs. Brown's portraits, and if Mrs.

Brown is able to pay \$40.00 a dozen for such work Mrs. White thinks she is just as well able, and does it.

But if the business doesn't come of its own accord, what then? You say it sounds just like a story book, but what if the story doesn't come true? What is the dignified way of soliciting business from those who have not learned of your ability as a home portraitist?

Individual solicitation is the only logical means that will meet with success, and it must be high class solicitation. You can't expect to get results from a form letter. It is too cheap and impersonal. Neither will ordinary printed matter reach the mark for which you aim. A personal letter, carefully thought out and neatly typed on the best of stationery *will get attention*. Be sure your letter is grammatically correct, reads smoothly, is convincing and to the point, and be sure you don't say more than is necessary.

This sounds easy, but it isn't. Don't be easily satisfied, whether you write the form of letter that is to be followed or have an experienced writer do it for you. Go over it very critically yourself and then have someone else criticize it for you. Your opening wedge depends upon the first impression. If it is not a good one you may have difficulty in getting the right start.



ARTURA PRINT FROM SEED PLATE NEGATIVE

*By Geister & Andrews
New York, N. Y.*



Make your appeal to the prospective customer, keeping yourself in the background.

For example:

*Mrs. B. A. Customer,
City.*

DEAR MADAM:—

Your family and friends would appreciate an out-of-the-ordinary portrait of yourself—a portrait less formal but far more interesting than could be made in a photographer's studio. There is now, in your city, a photographer whose services you may secure for the making of portraits in and about your own home.

The element of individuality—the charm of home surroundings, give to these intimate portraits a note of personal interest otherwise impossible to secure in a photograph.

We trust that you will be sufficiently interested to allow our representative the privilege of calling upon you, at your convenience, with specimens of portraits we have made in the homes of a number of our patrons.

Yours very truly,

THE PYRO STUDIO.

Telephone 829. Signature——

This isn't necessarily the best letter you could use but it makes your announcement in a dignified way without bragging about yourself. It is only intended to start a train of thought in the right direction and would be of no great value if not followed up.

Suppose you mail a dozen such letters to as many good prospects. You may hear from the most interested one of the twelve. After a couple of days you should telephone the other eleven. Or better still, have your reception-

ist do the telephoning if she has tact.

Mention your announcement, asking if it has been received and try to secure an appointment, not for a sitting but for showing specimens of the interesting work you are doing in the homes of your patrons. "Specimens" sounds better than "samples." And you must have good specimens.

Suppose your receptionist, or some other young lady of good appearance, who is also well spoken, makes the calls and arranges for the sittings. Have her touch on prices only when questioned, and then only as though prices were of secondary importance. You have selected prospects who are well able to afford pictures at the prices you ask, and you pay your prospect a compliment when you assume that a pleasing portrait is the first consideration.

We can't tell you how or where or when to make home portraits. If you use one of the methods of artificial illumination advertised so extensively, most any time or place will answer. If you use daylight you may find certain parts of the house will be better suited to an afternoon than to a morning sitting.

These are things you must find out for yourself, and your solicitor can help you. If the prospect is interested the solicitor may have an opportunity to go over the house with the idea of



ARTURA PRINT FROM SEED PLATE NEGATIVE

By Gaister & Andrews
New York, N. Y.



suggesting the most suitable location for the photographer to work in, not forgetting the light, airy upstairs living room or sun porch.

Equipment should add dignity to your profession, should be in keeping with the home in which you are working. Possibly your beginning may be made with a camera you *now* own, but if your prospects for a continued business are good, invest in such an outfit as the F. & S. Home Portrait Outfit No. 2.

It is even more important that you have good equipment for work in the home than for studio work. It inspires confidence in your ability as a workman and you will be more readily recommended to your sitter's friends.

As to material, we can only advise you to follow the lead of the most successful home portrait workers in the country. They use Eastman Portrait Film. Ask them why and they will give you a dozen reasons—all good ones—but the most important reason is that Film gives them negatives of better quality than it is possible for them to secure by the use of plates.

Go to the "movies" and you will see all sorts of "stunts" in lightings that you have been taught were impossible in photography. You have seen them and possibly you have thought there was some sort of fake practiced. How are they made?

The answer is simple: Film, the thinnest of negative making materials—practically no room for the light to spread—practically no halation. This also accounts for the success of many a home portrait negative, made under almost impossible conditions. It is in such work that you expect to see halation.

But it also accounts for quality in the negative where halation would ordinarily exist but would not be seen. A fine network of lights and shadows is present in the smallest highlight, but because of inherent halation of the glass plate the shadows are usually destroyed. Film preserves these minute shadows and the actual quality of the highlight is preserved.

The halation which destroys this fine highlight detail is none the less destructive because it is not actually seen. The effect of it is plain enough and *the lack of quality is seen*, but the fault has been looked upon as an unavoidable one; a defect of the photographic process to be overcome only by reducing the brilliancy of lightings—by resorting to low-toned, flat and mushy lightings which most any material would reproduce.

It was either that, or brilliancy at the sacrifice of detail—until a professional film was placed on the market. The home portrait man has been the pioneer in the use of film. He had to have it.

And it has given his work the prestige it well deserves.

To use plates for home portraiture is to do a difficult thing in the most difficult way and to materially limit the scope of your work. Use film, forget tradition and make exposures when your ground-glass image pleases you. The results will be startling and original, will give you an incentive for developing boldness and initiative that has been denied you in your studio work. You will gain confidence, will broaden, and you will add a quality to your work that can only come from the use of Film.



U. S. SCHOOL OF AERIAL PHOTOGRAPHY

Every photographer in the Dominion is interested in the U. S. School of Aerial Photography and what it is doing, so we know you will be interested in the school pictures we have been permitted to publish. These will give you some idea of the adequate facilities of the school's equipment.

It is hardly necessary to say that these are only glimpses of the work and lecture rooms, for there are facilities for keeping six or eight hundred men busily engaged with the work they are required to master before they are ready for their duties in France.

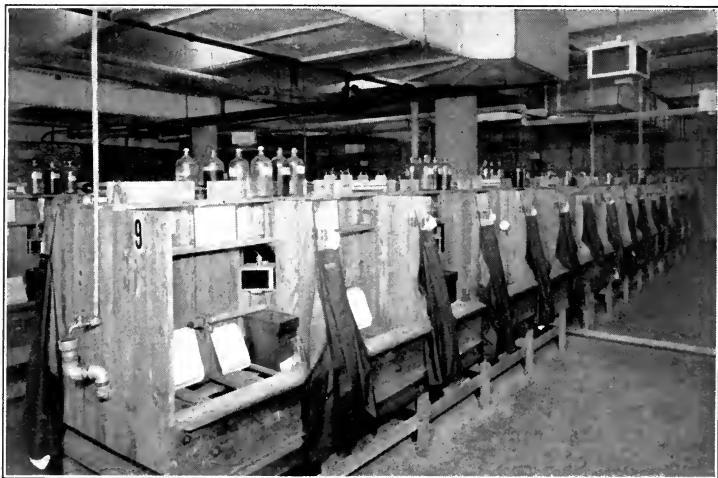
The photographic profession has been, and is now, well represented by men in this important branch of army work. There need be no fear as to whether or not the number will be sufficient or the training of the men sufficiently thorough for the great plans that are being carried out.

Rochester is proud of these men and is doing everything possible to make their short stay pleasant. The Y. M. C. A.—K. of C. hut, of which we show an interior, is directly opposite their quarters in the big Kodak Park building. Entertainments of various kinds are provided and the men of the U. S. School take part in all of Rochester's public festivities.

The men are living up to the best American traditions and will give a good account of themselves when they get into the serious business of war. They may not be able to lower the remarkable records that have been made for developing and printing from aerial camera exposures, but they will certainly hold them down.



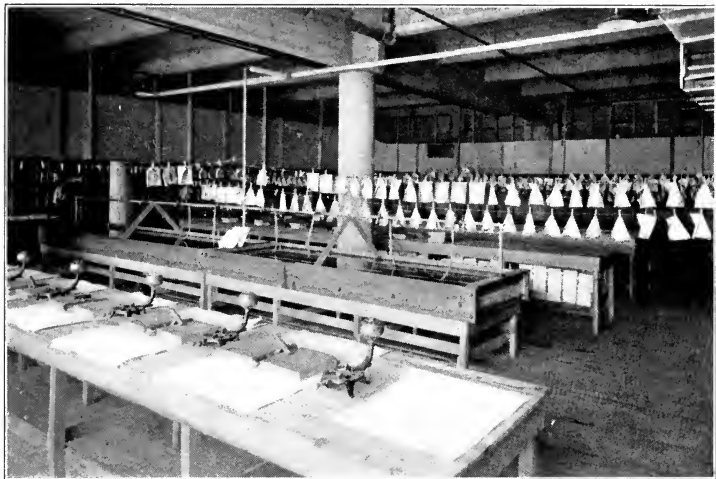
It isn't fair to yourself to use a printing process that doesn't get the most out of your negatives. An Artura print is the best print your negative will give.



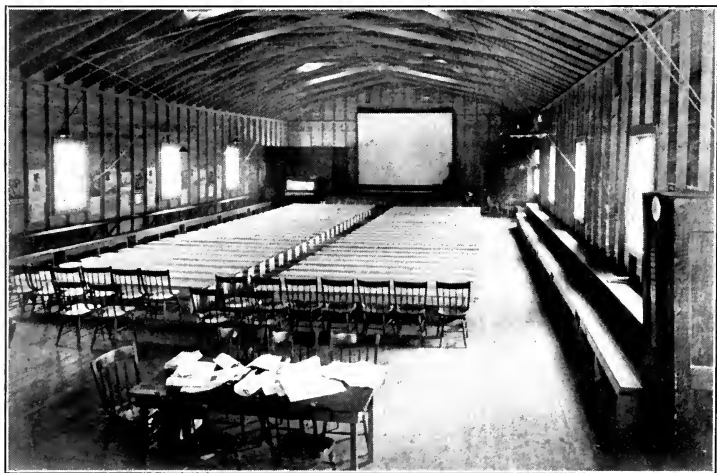
Developing Room, U. S. School of Aerial Photography



Lecture Room, U. S. School of Aerial Photography



Finishing Room, U. S. School of Aerial Photography



Y. M. C. A.—K. of C. Hut, U. S. School of Aerial Photography

SYSTEMATIC READING

Articles of an educational nature which appear in **STUDIO LIGHT** should be used by every employee of a studio but we often learn that copies are mislaid or lost and even the proprietor is often without those copies which he would like to preserve for future reference.

It is not possible for us to send **STUDIO LIGHT** to every employee of a studio, as our mailing list is large and material, labor and mailing facilities must be conserved as much as possible.

There is a very good plan, however, which is in use in many business establishments and which could be very well used in any studio to insure proper distribution of magazines.

A slip of paper bearing the name of each employee of the studio is pasted or clipped to the cover of the magazine and the page number of any article of special interest to the employee is noted at the bottom of the slip.

The magazine is turned over to the man whose name heads the list. When he has read the magazine he checks off his name and hands it to the next man on the list, and so on until all the names have been checked off and the magazine returned to the office where it is filed away for reference.

This plan not only allows each

employee to see all the magazines that come to the studio but seems to encourage the reading of information that is of value to the men in their work. Try it out in your studio.



CHROME ALUM ACID FIXING BATH FOR FILMS AND PLATES

In the June number we suggested a chrome alum acid fixing bath for papers, and stated that the Research Laboratory was working out a similar fixing bath for films and plates.

The work is finished and the following formula has been found to be satisfactory in every way. It clears the negative, keeps the gelatine emulsion hard and has exceptionally good keeping quality.

The ingredients are the same as used in the fixing bath formula for papers but the proportions are considerably different. It is not practical, therefore, to use the same fixing bath for both kinds of material.

The formula is given for an eight gallon bath and this may very readily be reduced if smaller fixing tanks are used.

CHROME ALUM FIXING BATH FOR FILMS AND PLATES

Water	5 gals.
Hypo	21 lbs.

When thoroughly dissolved, add the following hardening solution while stirring briskly:



ARTURA PRINT FROM SEED PLATE NEGATIVE

By Geisler & Andrews
New York, N. Y.



Water	128 ozs.
Sodium Bisulphite	2 lbs.
Chrome Alum	½ lb.

When the hardener has been added to the hypo solution, add enough water to make eight gallons.

This fixing bath is ready to use as soon as prepared and its fixing qualities are fully equal to those of the old standard Hypo-Acetic Acid fixing solution.



CLEAN SKYLIGHTS

Photographers in large towns should make a point of removing the grime from the outside of their studio skylights at least once a year. The soot which is deposited during the winter reduces the amount of light admitted to a considerable extent. Indeed, the cleaning of the glass at this time of the year often has the effect of halving the exposures. It is sometimes argued that the grime acts as a diffuser, but it is obviously an advantage to have plenty of light and, if necessary, to cut it down by means of diffusing screens inside the studio.



$4\frac{3}{4} \times 6\frac{1}{2}$

Plates of this size have heretofore listed at 90 cents per dozen—out of proportion to the list prices on other sizes. Rising costs have compelled us to equalize on this size, and the new list price is \$1.00 per dozen.

OUR ILLUSTRATIONS

The success of the firm of Geisler & Andrews is, in a measure, due to whatever circumstance may have brought about the association in business of these two widely differing personalities: The Artist, intent only upon the production of artistic portraits, striving constantly for new and original effects, free to use his initiative, unhampered by business cares. The business woman, keenly alert, keeping in touch with the public as well as the business and making every piece of work bear its proper burden of expense and yield a profit.

Miss Andrews has had several years of photographic experience while Mr. Geisler has been well known to the profession for a number of years. Their business association dates from August, 1917, and in that short time their business has had a wonderful development.

They chose a desirable location, created an artistic atmosphere about the studio and have put so much of quality and personality into their portraits that they have secured the patronage of some of the best people from society and the stage.

The rapid success of this concern and the means that brought it about are noteworthy. Sound business principles, backed up by work of excellent quality and the



ARTURA PRINT FROM SEED PLATE NEGATIVE

By Geisler & Andrews
New York, N. Y.



use of the highest grade materials are factors that will insure the success of any photographic business.

Our reproductions will be of interest to our readers as they are representative of the work of the Geisler & Andrews Studio.



STRAFING A GERMAN MONOPOLY

When the allied planes attack Mannheim, the point at which they aim to drop their bombs is the great Badische dye works just outside the city. This is the largest dye works in Germany and has been converted very largely from its original purpose to the manufacture of high explosives and poison gases. It was because the manufacturers of dyes had available a large force of research chemists that Germany was able to produce so quickly the explosives and the poison gases for the war. This was an important part of Germany's plan of preparedness.

The mobilization of the largest force of chemists in the world at Washington for work on poison gases shows how vital research in organic chemistry is at the present time. One of the great advantages of German research chemists before the war was the possession of a ready source of the chemicals from which their work could be started, the pro-

duction of these rare chemical reagents being a monopoly in the hands of a few German firms. With the cutting off of the German supply it became necessary for American research chemists to make their own chemicals for research work. This occasioned delays in important work—delays which could only be lessened to a small extent by the efforts of our universities, a few of which came forward and made some of the chemicals that were required.

In order to make sure that the chemists of this country may for all time be independent of German chemists and their products, and may have an adequate supply of the chemicals necessary for such research work as this war has shown to be an important preparedness measure, the Eastman Kodak Company has arranged to establish a department of its Research Laboratory to make these rare chemicals. The work will be done exclusively by women chemists as assistants, the nature of the work being such that it is considered suitable for them. It presents an opportunity for women to take an active part in chemical work of national importance. The new laboratory will be under the charge of Dr. H. T. Clarke, and it is expected that before long German monopoly in the production of the reagents necessary for chemical research work will be a thing of the past.

There's a picture of you in your soldier's memory. But he is expecting a new one, as you are to day, to take its place.



Make the appointment to-day.

THE PYRO STUDIO

Line cut No. 254. Price, 50 cents.

THE ONLY CONDITION

We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first*. C. K. CO., LTD.

\$3000 IN CASH

OFFERED AS PRIZES IN THE 1918

KODAK ADVERTISING COMPETITION

FOR PICTURES SUITABLE
AS ILLUSTRATIONS IN
KODAK ADVERTISING

Class A is open to Professional Photographers only, with cash awards totaling \$2000

Write for Circular giving Complete Details.

EASTMAN KODAK COMPANY

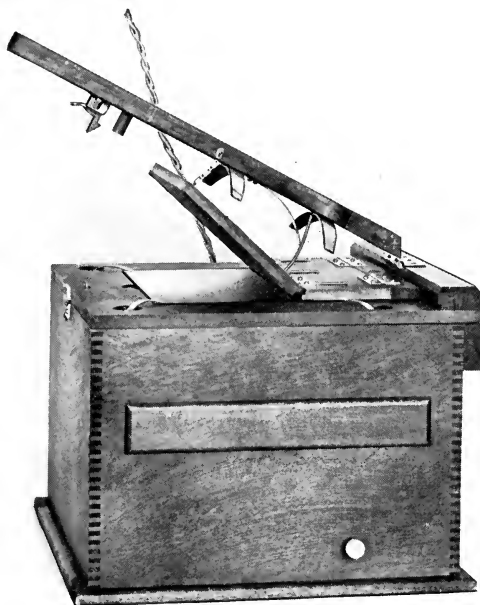
ROCHESTER, N. Y.

Contest closes Oct. 20, 1918.

*Saves
light*

*Saves
labor*

*Saves
time*



The No. 1 Eastman Printer

A thoroughly practical, convenient and economical professional printer for 5 x 7 and smaller size negatives.

The printer is operated by hand, burns two 60 Watt lamps, has automatic switch, lamp adjustments, red light and slide for ground glass. The printing opening is 8 x 8 inches; the box is strong and substantial.

The price with red lamp, electric cord and plug to
fit any ordinary electric socket \$10.00
F. O. B. Rochester, N. Y.

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.

Chemicals which are carefully tested and found to meet the exacting requirements of our manufacturing standards are stamped with our mark of approval and offered for your use.

To make sure of proper chemical results, specify C. K. Co. Tested when you order chemicals.



Look for this seal on the container.

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

You have better arguments to-day than ever before for the sale of Portrait Albums—and more prospective customers.



EASTMAN PORTRAIT ALBUMS

Will keep the soldiers' portraits as they should be kept, and when the boys come home, there will be room for the picture record they will make of the war and its friendships.

Have albums in stock, show them, sell them and you will make more business for yourself. And besides, there is a good profit for you on album sales.

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.

TOZOL

*The Complete Developer for
Photographic Papers.*

We recommended Tozol before the war.

It's the same to-day, it is the logical developer for Artura, Azo and Velox papers, and your dealer can supply you.

The genuine is always better than the best substitute.

THE PRICE

1 oz. bottle	\$ 1.15
$\frac{1}{4}$ lb. bottle	4.00
$\frac{1}{2}$ lb. bottle	7.75
1 lb. bottle	15.00

Canadian Kodak Co., Limited,

All Dealers'.

Toronto, Canada.

Seven by Eleven

A new size of the right proportions for groups, landscapes, architectural and other subjects.



Eastman View Camera No. 2

7 x 11

For either vertical or horizontal subjects, the proportions of the 7x11 picture are better than those of the 8x10. Especially suitable for groups, architectural subjects and landscapes. The pictures look larger and sell better, yet the material costs no more.

The 7x11 Eastman View Camera No. 2 has a swing of unusual latitude, a $6\frac{1}{4} \times 13\frac{1}{2}$ front board and a sliding arrangement which permits the lens to be centered on either half of the film or plate when making two exposures on a 7x11. This camera is an improved model of the Empire State and Century View and embodies every practical convenience.

THE PRICE

Eastman View Camera No. 2, 7 x 11, with
case and one Plate Holder \$60.00

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

Make your dark-room safe.

The Kodak Safelight Lamp



An adaptation of the Wratten Safelight Lamps, equally efficient, but smaller in size. As with the Wratten Lamps, is constructed only for electricity and is furnished with electric socket, cord and plug, but without electric globe.

Series 2 Safelight furnished with lamp.

Kodak Safelight Lamp, complete as above . \$4.00

Extra Safelights, 5 x 7, any series, each60

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

Enlargements will sell if they
have the quality—they will
have the quality if made on

ARTURA CARBON BLACK

The paper that duplicates the
tone, texture and contact qual-
ity of the small print.



CANADIAN KODAK CO.,
LIMITED,
TORONTO, CANADA.

All Dealers'.



FROM AN ARTURA IRIS PRINT

*By Fred H. Reed
Wichita, Kans.*



STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

ESTABLISHED 1906

VOL. 10

SEPTEMBER 1918

No. 7

THINGS WORTH KNOWING

It is easy for the photographer to follow a rut, to say he is only interested in straight photography and cares nothing about difficult work that occasionally comes to him. "Let the other fellow bother with it," is the easy way out, to be sure, but the photographer's ability is often measured by the difficult thing he does well, and business turned to him in this way more often than not sticks to him when other work is wanted.

For example, a professor of plant pathology had a number of specimens he wished photographed and the ordinary means failed to produce a satisfactory result. They were green leaves on which appeared reddish brown spots caused by some plant disease. The photographer had used ordinary plates and even orthochromatic plates and yellow filters and failed.

But he didn't give it up. He called for help and was quickly advised that a panchromatic plate and green filter would give the desired result, and so it did, as will be seen by our illustration.



The panchromatic plate is specially sensitive to red and green and as the green filter absorbed the

red and transmitted the green the red marks on the leaf photographed dark and the green body of the leaf light and full of detail. The result was perfectly satisfactory.

If it had been a red leaf with green markings exactly the same result would have been produced by using a red filter. The red filter absorbs blue and green and transmits red, so that with a plate sensitive to red (panchromatic) and a red filter, red objects photograph light, and blue and green objects dark.

Yellow filters are specially useful but not when it is desired to over correct green or red, that is, make green or red objects photograph lighter than they really are. Yellow light is a combination of green and red and absorbs blue. For this reason yellow filters are especially suitable for cloud rendering. The blue light is absorbed by the filter and as it doesn't reach the plate any blue sky in the picture is rendered much darker than the white clouds.

Yellow filters transmit their own color, so they are useful in photographing furniture. The yellow grain of the wood is rendered as light as it appears to the eye, but the plate used must be one that is sensitive to yellow. Yellow filters give good results on orthochromatic film or plates because they are sensitive to yellow and slightly to green.

A yellow filter and orthochromatic film or plate will not give a correct rendering of red. To photograph red as other than black the emulsion must be red sensitive. Yellow filters are very useful with panchromatic plates. They give the most generally satisfactory rendering of all colors when it is desired to have a number of colors in a single object appear in monochrome as they appear to the eye.

Of course a photographic plate cannot show color contrast, but it can show tone contrast and this the panchromatic plate will do perfectly with a K3 filter. If a light red object is photographed against a dark blue background the red will appear lighter than the blue, while if the blue and red are of the same strength they will photograph as the same shade of grey. A bright red against a dark green will likewise appear a light grey against a dark grey.

But this order can be reversed by using contrast filters and panchromatic plates. A red object against a green background of the same strength can be made lighter than its background if a red filter is used or darker than its background if a green filter is used.

Blue filters are seldom used because all plates are so much more sensitive to blue than to other colors that blue is as much over-corrected by using an ordi-



FROM AN ARTURA IRIS PRINT

By Fred H. Reed
Wichita, Kans.



nary plate without a filter as red is over-corrected by using a panchromatic plate and a red filter.

Even panchromatic plates are super-sensitive to blue and require at least a light yellow filter such as the K 1 or K 2 for best general results or the K 3 for absolutely correct rendering of all colors.

With these things in mind it is quite simple to secure almost any result within reason by using panchromatic plates and filters. There is nothing difficult about such work and it is certainly gratifying to succeed where you have previously failed.

Panchromatic plates and filters are very useful in copying stained prints or in reproducing valuable stained negatives.

If a print has an objectionable yellow stain, no trace of the stain will be seen in a negative made through a filter of a yellow slightly darker than the stain. The same is true of a yellow stained negative from which it is impossible to secure a good print. Make a positive through a filter darker in color than the stain in the negative. The G filter, a dark yellow, is generally used for this purpose. If the stain is red, use a red filter—if green, use a green filter.

Our illustrations show a number of interesting comparisons of work on ordinary and panchromatic plates, with notes of the filters used. Try a piece of diffi-

cult work for yourself, using an ordinary plate, then a Wratten Panchromatic plate and the proper filter. You will find it so easy to secure good results that you will never be without Wratten Panchromatic Plates and Filters.



OUR ILLUSTRATIONS

There is no lack of food, fighters or photographers in Kansas and, of the latter, Mr. Fred H. Reed of Wichita is one of those who are well known and universally liked. He has an excellent business, makes clean cut, bread and butter portraits that please the people and help to make photography popular.

Mr. Reed, with other equally broad minded photographers of Wichita, have a local photographic society, get together in the most friendly spirit of helpfulness to one another and, no doubt, profit by their friendly relations.

Mr. Reed is an excellent workman, uses only the best of materials and has found that the quality of work so produced is sufficiently appreciated to bring a price in proportion.

Our cover illustration as well as several of those on our inside pages are excellent examples of Mr. Reed's work.





FROM AN ARTURA IRIS PRINT

*By Fred H. Reed
Wichita, Kans.*



RETICULATION OR FRILLING OF NEGATIVES

The reticulation of the surface of negatives is often a source of trouble to photographic workers. The trouble is most likely to occur in hot weather and is generally produced after fixing, and either during or just subsequent to washing.

The wet gelatine emulsion becomes more or less finely wrinkled or corrugated, the network of puckers forming a pattern which generally extends over a part or all of the negative.

Reticulation sometimes occurs under certain conditions when intensifying with mercury, and also when negatives are placed in a close, warm room to dry. There is no remedy for reticulation once it has taken place, but the ounce of prevention will be obvious, once the phenomenon has been explained.



Fig. 1

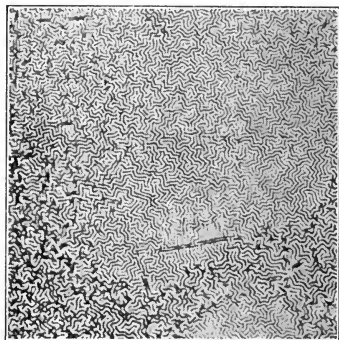


Fig. 2

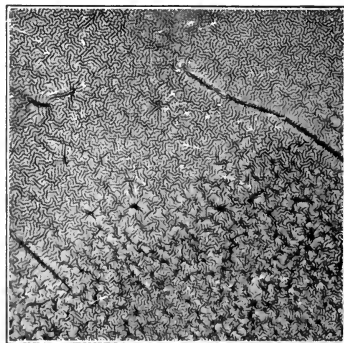


Fig. 3

As will be seen from the illustrations 1, 2 and 3, the grain of reticulation may vary considerably from very coarse down to very fine, and even microscopic dimensions. This reticulation is only slightly modified after drying. It will also be seen from the illustrations that reticulation on a developed plate causes the silver deposit to undergo a redistribution along with the reticulation



Orthochromatic Plate with filter.
Result is poor because plate is not sensitive to red.



BRIGHT RED POPPIES WITH BLACK CENTERS

Wratten Panchromatic Plate without filter
Result is good because this plate is so sensitive to red.

of the gelatine, the silver grains collecting in the raised portions and leaving the valleys or troughs between, fairly transparent.

The forming of a pattern or design by reticulation has been used in some photo-mechanical processes, such as the collotype, and for the production of irregular grained half-tone screens, but such processes are not of special interest to photographers.

An understanding of the conditions affecting and determining reticulation will be best understood if we first consider a few facts on the normal swelling and shrinking of photographic gelatine film, which takes place in its treatment and use.

There are two things to consider: the change of mass or bulk, and the change of shape. Any piece of gelatine placed in water within a temperature range of from 32° F. to 68° F., swells, at first, rapidly, then more slowly, and finally reaches a limit.

The limit of swelling depends upon the temperature, the character of the gelatine, and the presence of foreign substances in the water. Acid and alkali, in particular, have a great influence upon the swelling.

Gelatine should, theoretically, swell or shrink uniformly without change of shape, only altering its mass or bulk. This would be true if it could be dried very slowly so that drying would proceed at the same rate in all parts of the mass.

This is not possible in practice, however, as an emulsion placed on glass dries more rapidly on the surface than in the interior, producing stresses and distortion. The gelatine emulsion coated on a glass or film support is also firmly attached to it, so that one side is eliminated as regards drying.

The gelatine cannot spread off the plate so that its swelling or shrinkage is limited to one direction, viz., perpendicular to the plane of the support. Under normal conditions a gelatine film can be repeatedly swollen and dried without injury, but as the swelling parallel with the surface, which would remove the gelatine from the plate, is prevented by adhesion to a rigid support, the lateral strain must be compensated by the perpendicular swelling.

Suppose, however, that there is excessive swelling and shrinking, either successively or simultaneously, then the gelatine would be strained beyond its limit, causing either total or partial reaction. In the former case, the result would be that of frilling or the film entirely leaving its support, while in the latter, the strain not being uniform, we get a local puckering or folding. This is the common form of reticulation. The two effects are shown in Fig. 4, the shaded section representing the glass or film support.



ORDINARY PLATE
The colors are incorrectly rendered



PANCHROMATIC PLATE K3 FILTER
Notice the correct rendering of the entire design on each of the cards

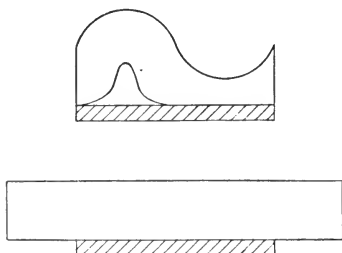


Fig. 4

The next thing is to determine the chemistry of the process which causes the excess swelling pressure and the localized arrest of this.

Reticulation was produced as follows: An ordinary plate was flashed, developed in a standard pyro-soda developer for 4 minutes at 80° F., then rinsed and fixed in a standard hypo-bisulphite fixing bath at 80° F. Reticulation was then found to depend upon the temperature of the wash water as follows:

Temperature	Reticulation
70° F.	None
80° F.	None
90° F.	Faint
100° F.	Strong

Instead of water, stronger and more definite results were obtained by an after-treatment with the following solution:

95% Ethyl Alcohol	. 50 c.c.
5% Formaldehyde	. 40 c.c.
Water	. . . . 110 c.c.

In this case the following factors may have played a part:

- (1) Prehardened gelatine in the emulsion.
- (2) Tanning agents in the developer.
- (3) Excess swelling pressure in hot developer, etc., and particularly in washing.

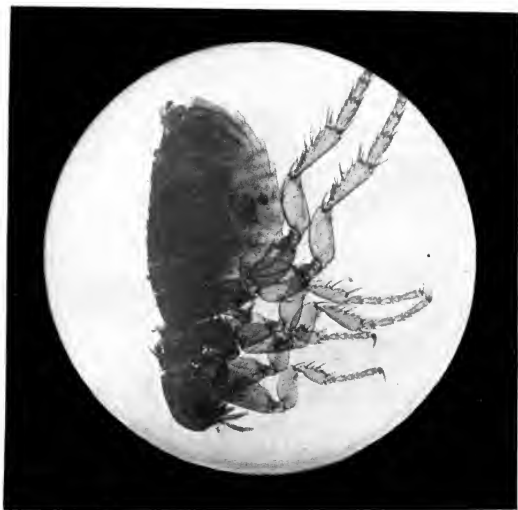
That reticulation can be produced by the combined action of a swelling or softening agent, and a hardening or anti-swelling agent to restrain this, is shown by the production of reticulation by the following combinations:

Hardening Agent	Softening Agent
(1) Tannic Acid	Acetic Acid
(2) Quinone	Acetic Acid
(3) Chromic Acid	Hot Water
(5) Mercuric Iodide	Potassium Iodide

All of these combinations produce reticulation.

The conclusion to be drawn from these experiments, is that the most common form of reticulation is due to the tanning agents in the developer, and the hardening agents in the fixing bath not hardening the gelatine uniformly because of the presence of alkali or acid in connection with heat, all of which have a softening or swelling action. Consequently, some portions of the gelatine shrink, while other portions swell, and as there is not sufficient room for the swelled or puckered portions to dry down to the film's original thickness, ridges are formed with intervening valleys, making a distinct design.

The design in reticulation is much more apparent where there is a developed image, than in the



Ordinary plate without filter.
The reddish brown body is too dark.



PHOTOMICROGRAPH OF A FLEA

Panchromatic Plate and Red Filter.
The over-correction of the red filter gives the desired result.

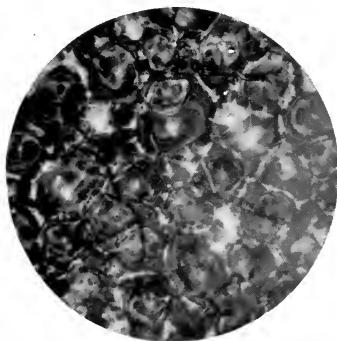


Fig. 5

more transparent parts of a negative. There is an apparent migration of the silver particles, making the ridges denser, while the valleys are less dense or quite clear. This is similar to the effect (a dark ring) produced when a drop of water is allowed to remain on a negative until it dries. The tension in drying softens the gelatine and forces the silver particles to the circular boundary of the spot.

It is quite possible that the action of some developers in producing grain in negatives is really a form of incipient reticulation. The original grain of the plate is coarsened in development by a clumping together of the original grains, which is noticeable and objectionable in enlarging. It is believed that nuclei are formed by the developed silver particles, which have a tendency to gather to them the finely divided reaction products of development which



Fig. 6

have tanning or coagulating properties.

Considering the great change in the swelling of an emulsion in passing from an alkaline developer to an acid hypo, it is quite likely that any sub-microscopic reticulation would be further developed, and the grain of the silver image again coarsened. Further experiments are hoped to bring to light more information on this subject.

By adhering strictly to the use of the formulas recommended by the manufacturer, using fresh solutions, and keeping them cool, such troubles will be avoided and the best results always secured.

Figures 5 and 6 are photomicrographs of examples of reticulation. The illumination was vertical, the enlargement about sixty diameters.





By J. M. Belt. Standard Orthonon Plate.

PHOTOGRAPHING THE SUN

On June 8 the attention of many people in this country was distracted from the war for a few minutes to contemplate the wonderful phenomenon occurring in the sky, this being the eclipse caused by the passage of the moon between the sun and the earth.

Eclipses in which the sun is partially obscured by the moon are fairly common, but it is rare for any portion of the earth to be visited by a total eclipse, in which the moon's disk completely covers that of the sun and for a few

minutes produces an artificial and temporary night.

The eclipse of June 8 was the first eclipse in this century to be total in the United States, and over the band of totality it naturally excited the greatest possible interest. This band of totality extended from the Pacific to the Atlantic coast but was only about sixty miles wide, so that for most of the country the eclipse was seen only as a partial covering of the sun's disk by that of the moon. The partial eclipse lasted for about two hours, but at some places in the east the sun set before the moon was clear of its disk.



Ordinary Plate

ANTIQUE CHEST OF

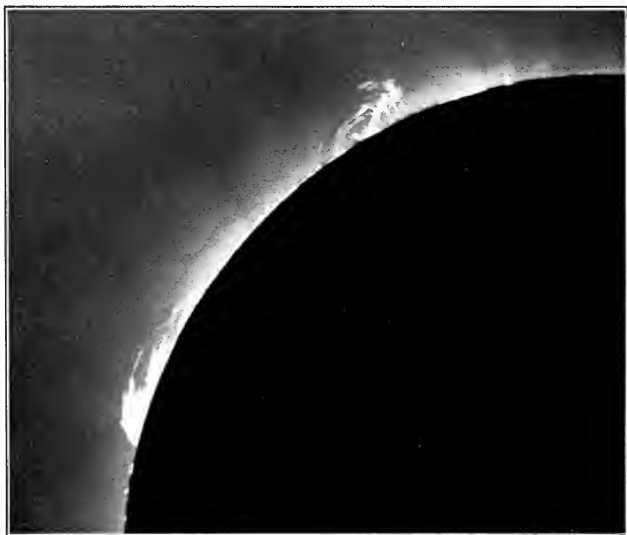
The English manufacturers of this furniture exported to the United States
of their product, sold



Panchromatic Plate Red Filter

RAWERS, MAHOGANY

ates in one year, before the war, a million and a half dollars worth
om good photographs.



Courtesy of Professor E. B. Frost, Yerkes Observatory.

One of our readers had the happy thought of photographing the eclipse at intervals from the moment when the moon's disk was first seen touching that of the sun until the sun was hidden behind the trees of the horizon. He used an 8 x 10 camera and lens with a Standard Ortho-non plate, and gave eighteen exposures in all, one exposure being made every five minutes. The lens was closed to its smallest opening, the shutter set at $\frac{1}{1000}$ th of a second, and after seeing that the camera was rigidly set in its position, the shutter was snapped at five minute intervals. The photograph shows that at the

beginning this gave too much exposure so that some of the first exposures are buried in halation, and the reflection of the sun's image from the various surfaces of the lens has produced spots of light on the negative of the kind known to the opticians as "flare" spots. But as the sun sank lower in the atmosphere and its light began to be obscured by the absorption of the air, the exposure gave admirable results.

To the astronomers, a total eclipse offers a rare and valuable opportunity. From the sun there are continually shooting out flames of incandescent gas which cannot be seen because of the intense



Ordinary plate—note poor color rendering.



Panchromatic Plate, K 3 Filter—the result is excellent.

RED TERRA COTTA TOBACCO JAR LINED WITH BLACK

The Griffins are yellow against a blue ground, the geometrical design is yellow, reddish brown and blue.

light of the sun itself, while around the sun there spreads out into space a wonderful phenomenon called the "corona," which is seen in an eclipse as a ring of pearly gray light, growing fainter and fainter as it recedes from the sun and spreading out into space on all sides. In order to photograph these phenomena a number of scientific expeditions went from the observatories to the belt in the country where the eclipse was total, and setting up temporary observatories with elaborate apparatus, they photographed the corona and the "prominences," as the flames of incandescent gas are called, and made measurements of the phenomena associated with the sun which can only be studied effectively when the sun's disk itself is eclipsed.

By courtesy of Professor Edwin B. Frost we are able to print a photograph showing a quarter of the circumference of the sun obscured by the moon's disk, projecting from the edge of which are seen two gigantic prominences. This was taken by the expedition from Yerkes Observatory, of which Professor Frost is the director. The uppermost prominence shown, looking like the skeleton of some prehistoric monster, projects no less than 47,000 miles from the surface of the sun, a distance nearly six times the diameter of the earth. The exposure for this

photograph, which was made by Miss Mary R. Culver, was twenty seconds, the sun being somewhat obscured by clouds. In addition to the prominence there is seen around the sun the light of the inner corona, this being the only portion which was bright enough to be recorded with the exposure given.

The astronomers are now busy studying the results which they have obtained, and drawing from them lessons which will in turn be used to plan new measurements to be made at the next eclipse.



A GENEROUS OFFER

A great many photographers have gone into the service and left their studios in charge of their wives, and in a great many cases, no doubt, these women need advice and instruction.

W. S. Lively, known by most every one in the profession as the manager of The Southern School of Photography, has seen this opportunity of doing a big unselfish thing and has grasped it. He proposes to throw open the doors of his school to the wives of photographers who have entered the Government service, and will give them two weeks of absolutely free instruction.

A program which would ordinarily cover three months will be condensed into a two weeks course



Ordinary Plate



Wratten Panchromatic Plate
and K3 Filter

LEMON IN GREEN GOBLET. BLUE-GRAY BACKGROUND

of intensive training that will be of inestimable value to the woman who has been left with a photographic business as her support.

The instruction will cover the making of negatives under the light, using both artificial and daylight, and the accompanying dark-room instruction. Most women who have seriously taken up such work have been successful and Mr. Lively expects to be able to make the photographers' wives who come to his school competent to take charge of their studios, make sittings and successfully conduct their studios during the absence of their husbands.

This offer is the loyal, unselfish contribution of a big hearted man whose only idea is to help win the war by making the wives of soldier photographers efficient and independent. Their husbands will be better soldiers, knowing their business is in good hands, and studio help, which is so hard to get, will be conserved.

The two weeks course will begin October 7th and those who wish to avail themselves of this opportunity should advise W. S. Lively, McMinnville, Tenn., so that arrangements may be made and accommodations secured.



TOZOL

The dependable developer.

A PRECAUTION

The Acetic Acid Fixing Bath is the best fixing bath ever found for developing-out papers and it has been one of the most abused baths used because it would stand a lot of abuse.

It can not be expected that a substitute bath will stand the same abuse, though with reasonable care the Chrome Alum bath recommended in the June number of *STUDIO LIGHT* will work fully as well.

The precautions necessary with this bath are to have prints as free from developer as possible in order that no more alkali than necessary be carried into the fixing solution. Rinse prints quickly but very thoroughly after development, and when they are placed in the fixing solution, face up, see that they are kept moving and the fixing solution allowed to reach every portion of the print's surface during the first few minutes of fixing.

The Chrome Alum bath does not stop the action of the developer as quickly as the Acetic Acid bath, and if the above precautions are not taken—if prints matt together or air bells are allowed to form on their surface or if they are not continually covered with the solution, they will be stained, streaked or spotted.



Home on a furlough—the very chance you have wanted to get his portrait.

*Make an appointment
for your sailor or
soldier to-day.*



THE
PYRO STUDIO.

Line cut No. 255. Price, 50 cents.

THE ONLY CONDITION

We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first*. C. K. CO., LTD.

Make your dark-room safe.

The Kodak Safelight Lamp



An adaptation of the Wratten Safelight Lamps, equally efficient, but smaller in size. As with the Wratten Lamps, is constructed only for electricity and is furnished with electric socket, cord and plug, but without electric globe.

Series 2 Safelight furnished with lamp.

Kodak Safelight Lamp, complete as above . \$4.00

Extra Safelights, 5 x 7, any series, each60

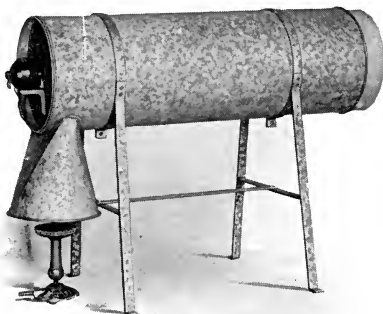
Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

Use an

IMPROVED MAJESTIC PRINT DRYER



Small initial cost—easy to operate—dependable and efficient—nothing to get out of order. A Majestic Print Dryer will enable you to turn out a big amount of work in a little time. The prints will dry thoroughly, properly shaped, in from fifteen to twenty minutes.

Improved Majestic Print Dryer No. 1, complete,
with 2 drying rolls, electric motor, fan,
gas heater and stand \$38.00
No. 5, complete, with 5 drying rolls 75.00

Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.

Chemicals which are carefully tested and found to meet the exacting requirements of our manufacturing standards are stamped with our mark of approval and offered for your use.

To make sure of proper chemical results, specify C. K. Co. Tested when you order chemicals.



Look for this seal on the container.

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

WANTED

DISCARDED NEGATIVES

We purchase discarded negatives of standard sizes from $4\frac{3}{4} \times 6\frac{1}{2}$ to 20×24 , providing same are in good condition and are carefully packed in accordance with our instructions.

We will pay all the freight on shipments of 100 lbs. or more, except from localities where the freight rate exceeds \$1.00 per 100 lbs., in which case the shipper will be required to pay the excess.

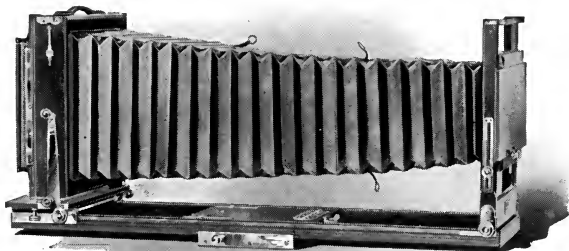
Before making any shipment please secure these instructions, prices and further particulars, which will be furnished on application.

Canadian Kodak Co., Limited,
Toronto, Canada

Address shipments to West Toronto.

Seven by Eleven

*A new sized picture with
big commercial possibilities*



Eastman View Camera No. 2

7 x 11

For either vertical or horizontal subjects, the proportions of the 7x11 picture are better than those of the 8x10. Especially suitable for groups, architectural subjects and landscapes. The pictures look larger and sell better, yet the material costs no more.

The 7x11 Eastman View Camera No. 2 has a swing of unusual latitude, a $6\frac{1}{4} \times 13\frac{1}{2}$ front board and a sliding arrangement which permits the lens to be centered on either half of the film or plate when making two exposures on a 7x11. This camera is an improved model of the Empire State and Century View and embodies every practical convenience.

THE PRICE

Eastman View Camera No. 2, 7 x 11, with
case and one Plate Holder \$60.00

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

You have better arguments to-day than ever before for the sale of Portrait Albums—and more prospective customers.



EASTMAN PORTRAIT ALBUMS

Will keep the soldiers' portraits as they should be kept, and when the boys come home, there will be room for the picture record they will make of the war and its friendships.

Have albums in stock, show them, sell them and you will make more business for yourself. And besides, there is a good profit for you on album sales.

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.

TOZOL

*The Complete Developer for
Photographic Papers.*

We recommended Tozol before the war.

It's the same to-day, it is the logical developer for Artura, Azo and Velox papers, and your dealer can supply you.

The genuine is always better than the best substitute.

THE PRICE

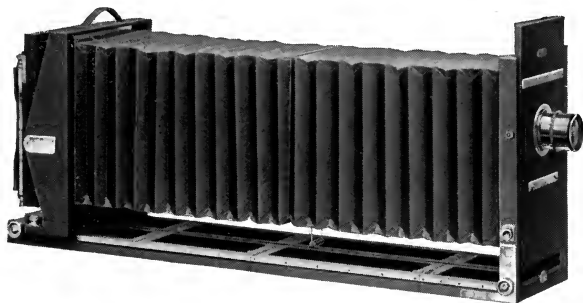
1 oz. bottle	. . . . .	\$ 1.10
$\frac{1}{4}$ lb. bottle	. . . . .	4.00
$\frac{1}{2}$ lb. bottle	. . . . .	7.75
1 lb. bottle	. . . . .	15.00

Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.

F. & S. Commercial Camera



Provided with every adjustment essential for Commercial Photography. The great bellows capacity permits the use of lenses with extreme variation in focal length.

The lens board moves independently of the rectangular bellows, providing extreme raising and lowering of the lens without cutting into the image.

The double swing back is reversible, and operated by a quick acting screw.

The bed is divided into four interchangeable sections, and the focus may be controlled by either front or back rack and pinion.

Focal capacity, 8 x 10, 42 inches; 11 x 14, 54 inches.

Ask your dealer for Professional Catalogue.

Folmer & Schwing Department

Eastman Kodak Company

ROCHESTER, N. Y.

STYLE FAIRFIELD



For
4 x 5 and 5 x 8
Square Portraits.

Colors—
Grey and Brown.

The Fairfield—Made of high grade duplex stocks with rich leather grain finish, deckled edges. Insert has tinted raised corner design and cover has neat crest embossed in upper left hand corner.

A popular “slip-in” corner style that will please your best customers.

SAMPLE MAILED FREE

MANUFACTURED BY

Canadian Card Co., Toronto, Canada.

PHOTOGRAPHIC MOUNTS
MADE IN CANADA

Get all the quality
of your negatives in
all your prints—use

ARTURA

*The paper without a
disappointment.*



CANADIAN KODAK CO.,
LIMITED,
TORONTO, CANADA.

All Dealers'.



FROM AN ARTURA IRIS PRINT

*By Lauritz Bros.
Los Angeles, Cal.*



STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

ESTABLISHED 1906

Vol. 10

OCTOBER 1918

No. 8

GREATEST PHOTOGRAPHIC NECESSITY CONTROLLED BY GOVERNMENT

YOU MUST SAVE SILVER WASTE

The Government has found it necessary to so control the use of gold, silver and other precious metals that their waste or use in non-essentials will be limited and the supply conserved for such purposes as will help in winning the war.

This applies directly to every photographer, for silver is essential in your business. All of you use silver every time you use a film, a plate or a piece of paper. And every time you throw away a scrap of paper or pour a fixing bath into the sink you are wasting.

Photography is an essential business, but the silver that has been going down the waste pipes must be conserved—must find its way back into the channels of commerce.

Every photographer who is not already recovering silver waste

should begin at once, for both patriotic reasons and the preservation of his own business.

You have helped to conserve food, have voluntarily made sacrifices that have more or less inconvenienced you, and you should be all the more willing to conserve this great photographic necessity.

If the supply of silver should be cut off you would soon be put out of business, for you must have sensitized materials. And since fully one-half of the silver in a plate or film or piece of paper goes into the fixing bath from which it can readily be recovered, your saving of this silver will help to prevent a further shortage and the serious curtailment of necessary photographic supplies.

Silver waste is worth almost three times what it was a few

years ago, and its recovery is simple and inexpensive. If you have not found it profitable in the past, consider present conditions. Silver is worth a dollar or more an ounce. It requires about three ounces of the commercial form of sulphide of soda to precipitate an ounce of silver, sulphide of soda answering equally as well as the more expensive sulphide of potash for this purpose.

There are large photographic establishments that recover all the way from \$500 to \$1,000 a year from fixing baths, scrap paper and spoiled prints. You can recover in proportion and should be more than willing to do so because it is necessary as well as profitable conservation.

Pour all of your discarded hypo solutions into barrels. When a barrel is full, add about one quart of a freshly prepared, saturated solution of sulphide of soda. Stir well and allow to stand for at least twenty-four hours. At the end of this time dip out a graduate full of the solution and add a small quantity of the sulphide solution. If the solution remains clear all the silver has been precipitated. If a sediment forms, add more sulphide to the solution in the barrel.

It is important that barrels in which silver is being precipitated should be kept as far away from your work rooms as possible. The fumes from sodium sulphide are

ruinous to sensitive photographic materials. Covering the barrels will help do away with the objectionable odor of the sulphide.

After all the silver has precipitated, pour off the clear solution, scrape out the sludge remaining in the bottom and place it in a sack, hanging this over the edge of the barrel until it has thoroughly drained. It should be as dry as possible before it is sent to the refiner.

To recover silver from paper waste it should be burned where there are no draughts, as the ashes contain the silver.

Wet sludge, which has been thoroughly drained, amounting to twenty-five pounds or more, can be profitably handled by the refiners, or if thoroughly dried by heat, half this weight. It is best, however, to ship as large a quantity as possible at one time.

Some photographers find it is not practical to recover silver in the studio or directly on their premises because other tenants object to the odor of sulphide. In such cases it is worth while to accumulate a barrel or two of old fixing solution and take it away from the studio for the precipitating process. If barrels are not convenient to handle, five gallon cans that have contained oil are cheap and easily handled and may be had from most any garage.

You may be short of help, you may be busy and feel that it



FROM AN ARTURA IRIS PRINT

*By Lawritz Bros.
Los Angeles, Cal.*



isn't worth while to save fixing solution, even if it is worth eight or ten dollars a barrel, but—you are doing a lot of things you don't like to do and are doing them cheerfully because they have been made necessary by war. Silver must be saved—you can save it—you will save it because it is a war measure and may also affect the life of your business.

The following refineries will be glad to advise you on request as to the minimum quantities of waste they can profitably handle:

Handy & Harman,
Bridgeport, Conn.
31 Gold St., N. Y.

T. B. Hagstoz & Son,
Philadelphia, Pa.

Elizabethtown Smelting & Refining Co., Newark, N. J.

Emil Schneider,
Newark, N. J.

Philips & Jacobs,
Philadelphia, Pa.

Irvington Smelting & Refining Co.,
Irvington, N. J.

Thomas J. Dee & Co.,
Chicago, Ill.

Spyco Smelting & Refining Co.
Minneapolis, Minn.

Wildberg Bros.,
San Francisco, Calif.

Canadian photographers will be interested to know that shipments of such residues into the U. S. are not subject to duty.

OUR ILLUSTRATIONS

It isn't so much the man himself but rather what he does that interests most of us. And yet when we see remarkable photographic work we like to know something about the man who made it.

Lauritz Brothers of Los Angeles were born in the northern part of Sweden and were operators in one of the leading studios in that country. They came to America six years ago, worked for a time with Sweet Bros. of Minneapolis, moved to California and opened a studio for themselves in Los Angeles the next year.

These two men have built an excellent business and a high-class business in what is almost record time, and their success from the beginning has been due entirely to their ability and the quality of the work they have produced.

They selected Artura as the paper having the most of quality and have used it exclusively in producing the excellent portraits that have made their Los Angeles business a success.

Our reproductions fall far short of the quality of the originals but will be none the less interesting, as allowances must always be made for the limitations of half tones and printer's ink.

The pictures you are planning to send to that Soldier of yours — they must soon be on the way if you would make sure that he has them to gladden his heart on Christmas morning.

There's a photographer in your town.

Eastman Kodak Company, Rochester, N. Y.

MORE ADVERTISING FOR YOU

TO GET PHOTOGRAPHS IN THE
CHRISTMAS MAIL FOR
FRANCE EARLY

It's going to be a big job to make over a million and a half American soldiers, in France, happy at Christmas time. A great many of them are going to be happy if they receive photographs in their Christmas packages, and disappointed if they don't, but they won't even receive packages if they are not on their way soon.

How many boys from your town are in France now, or on their way? And have you started a campaign of advertising to remind their mothers and fathers and sweethearts that Christmas pictures for their soldiers should be made right now?

No one thing in that Christmas package will mean so much to the soldier boy as the little photograph of some loved one. He will treasure it, will show it with pride to his companions, and will fight for it, because it is the symbol of home and all he holds dear.

We have been told by the men whose business it is to keep up the fighting courage of our Army, that letters and pictures from home do more than all else to keep them in spirits.

They can be amused, can get bodily comfort and refreshment, can buy sweets and trinkets, but

they can't buy letters or photographs—these must come from home.

You have a definite part to play in making the men of our Army and Navy happy. It is up to you to make the photographs they want, and they will not be made if the families and friends of the soldier boys do not get a warning and heed it.

We are doing our part by making a big advertising drive in the magazines, using the copy shown on page 7. This will appear as full pages in the October numbers of the *Atlantic Monthly*, *Century*, *Harper's*, *Scribner's*, *Review of Reviews*, and *World's Work*; as one-quarter pages in the November numbers of the *Ladies' Home Journal*, *Woman's Home Companion*, *Delineator*, *Woman's Magazine*, *Designer* and *Pictorial Review*, and as one-quarter pages in early October numbers of *Saturday Evening Post* and *Collier's*.

The list of November magazines are out early in October, so it will really be October advertising. But it can't do for you what local advertising will do. It is general advertising and you can rest assured it will be read by practically every mother or father or sweetheart who has a soldier in France. But such advertising can't point to you as the photographer in your town. You must do this yourself, and in doing so point out again the



FROM AN ARTURA IRIS PRINT

*By Lauritz Bros.
Los Angeles, Cal.*



importance of having sittings made at once.

You should have three Christmas rushes this year, or one continual rush—pictures made in October for overseas mailing—pictures in November for the boys in training camps or just leaving for France, and pictures in December for the folks at home.

But above all things, get busy with your October advertising. The mail is going to be heavy, and while every effort will, no doubt, be made to reach all soldiers on Christmas day, there is a chance for disappointment if packages are not in the mail early. It will also facilitate the handling of a very heavy Christmas mail, and none of us wish to make the task of transportation any more difficult than it now is.

Our boys are winning this war and are going to keep on winning it until every mother's son in France can say he quit because the job was finished. And we who are left at home must keep on supplying the encouragement they need, and have a right to expect, because they are fighting our battles.

It is our plain duty to urge everyone who loves a soldier to send photographs for Christmas, and to send them early and so make sure he will have them to gladden his heart on Christmas morning.

Use our copy on page 7, if you

like, substituting your firm name for ours, or use copy of your own that will get the same idea across, the main thing being to reach the public with an appeal that has a punch to it.

Our only idea in suggesting the use of our copy is that it is short and to the point, it is surrounded by sufficient space to make it stand out prominently and it will be read so generally in the big magazines that its use in your local paper will attract attention and couple your name with the thought of photographs for the boys in France.



A SUGGESTION

Mr. Brecken of Pittsburgh, one of the pioneers of Home Portraiture, gave some good advice at the recent Convention of the Photographers' Association at Baltimore. "The speed with which you work is a very great question," said Mr. Brecken. "Fifteen minutes is long enough for any sittings I have ever made in a home. Most people complain of the amount of time spent by home portraitists, and grumble at the inconvenience of having their homes torn up and left in disorder. That brings out another point. Leave things as you find them; know what you are going to do, get it done, straighten up and get out."





FROM AN ARTURA IRIS PRINT

*By Lauritz Bros.
Los Angeles, Cal.*



FINISHING THE ENLARGEMENT

One of our readers puts the question like this: "You've said enough about making enlargements—how to make them, why one should make them, etc., but there is one article you have not published, at least I have not seen it, and that is, how to mount or finish the prints to make them most attractive." That's a pretty big question but there is an answer and we will try to give it.

The one thing that should *never* be done is to deliver an enlargement that doesn't look finished. You wouldn't think of delivering an order of contact prints in such condition that your customer would have to find mounts or folders for them before they presented a finished appearance. No more should you think of allowing an enlargement to leave your hands until it is a finished piece of work.

There are as many ways of mounting enlargements as of mounting prints, but if they are of fairly good size they look best framed. But *stop, look and listen*. If you sell frames, don't try to hook the customer. Let the wind blow the bait in his mouth.

It seems natural for a customer to shy away from enlargements when you suggest frames. Let some of your nicely framed enlargements suggest frames, but finish them ready for delivery

without frames and you will then be able to sell frames all the more easily.

The style of the enlargement will depend to a great extent upon the size of the original contact prints. If your customer orders half cabinet prints, suggest and show samples of ten or twelve-inch enlargements which can be mounted the same as 8 x 10 prints.

If, however, your customer has ordered 6 x 8 or 8 x 10 contact prints, the enlargement you would most likely sell would be about sixteen or twenty inches, which is larger than is ordinarily mounted.

Enlargements of this size are most attractive when made with white margins and plate-sunk centers, using a buff stock such as Grade E Carbon Black Artura. Drop into an Art Dealer's store and look at a few etchings and you will get a good idea of the effect of the margin and plate-sunk line.

Trimming and masking has everything to do with such prints. Very good proportions for panel shaped masks are 6 x 9, 7 x 10½, 8 x 12, 9 x 13, 10 x 14½, etc. For a 10 x 14½ inch print the top and side margins can be 2 inches and the bottom 3 inches. Always make the lower margin greater than the sides or top. Some prefer the top margin slightly greater than the sides, but it should never equal the margin at the



FROM AN ARTURA IRIS PRINT

By Lawritz Bros.
Los Angeles, Cal.



bottom. If it does, the lower margin will look the smaller of the two and the effectiveness of the print is lost. A $10 \times 14\frac{1}{2}$ print with margins would be $14 \times 19\frac{1}{2}$ inches.

Making the plate-sunk center is very simple. The line should be from $\frac{5}{16}$ to $\frac{1}{2}$ inch from the margin of the image, depending on the size of the print. For a print with a 9×13 size image with $\frac{3}{8}$ inch margin, the cardboard form for making the plate-sunk line should be cut $9\frac{3}{4} \times 13\frac{3}{4}$ inches, exact.

Placing the cardboard form in position to emboss the line may be done in several ways, but the simplest way is the best. Place an electric lamp inside a box with a piece of plate glass over the open top, lay the print face down on the glass, and with a ruler and pencil draw a line on the back of the print exactly $\frac{3}{8}$ of an inch beyond the edge of the image. The light makes the print sufficiently transparent. Now lay the cardboard form on the glass and the print on top of the form, carefully adjusting it until the pencil lines register with the edges of the cardboard form underneath. Hold the print in place while you run a blunt edged tool along the back to press the print over the edge of the cardboard. The cardboard form should be made of about five-ply stock.

The result you get gives the

print a finished appearance, and such a print can be delivered in a folder or not, as you like. Mounting solid removes the embossing, but the prints do not need to be mounted for framing.

In framing such prints do not make the mistake of using a heavy frame. One-half or three-quarter inch is best for small sizes and one inch for fairly large sizes. A heavy frame is not suitable when a picture has sufficient margin to give it a background.

If you wish to mount enlargements and are unable to secure suitable mounts for prints of medium size, make them yourself. The mount should not be too dark, the prevailing tone of the enlargement being the deciding factor. Double mounting is the most effective. For prints of medium or dark tone a light underlay is best but it should seldom make more than a one-quarter inch line around the print and should never be glaring in its brightness. Grey or brown mounts with light grey or buff underlays for the prints make good combinations.

For prints that are light in tone—sketchy effects or white backgrounds, a fairly light mount may be used with a darker underlay to make the print stand out from its background. But the contrast between mount and underlay should never be so great that attention is drawn away from the print. The idea in mounting and



FROM AN ARTURA IRIS PRINT

*By Lauritz Bros.
Los Angeles, Cal.*





FROM AN ARTURA IRIS PRINT

*By Lauritz Bros.
Los Angeles, Cal.*





FROM AN ARTURA IRIS PRINT

*By Lauritz Bros.
Los Angeles, Cal.*



framing is to center attention on the picture, and to accomplish this result the mount or frame must enhance the attractiveness of the picture.

It might be added that fairly thin mounts make small enlargements more effective than heavy mounts, and a folder to hold the mount further improves it and gives your samples an attractive appearance.

It is difficult to give more advice on the finishing of enlargements. Your stock house carries an assortment of cover papers, folders and light weight cardboard, and an idea of the most suitable colors, surfaces and weights can only be had by ordering samples and trying them out. The method of embossing which we suggest is simple and needs only to be tried to convince you of the effectiveness of the result. The size and proportion of the enlargement is also an important consideration in making quick sales. Try the proportions we suggest and judge for yourself.

We trust some of these suggestions may be of benefit to those making portrait enlargements.



Pictures for our soldiers in France should be made now. Advertise this fact.



THE FOCUSING SCREEN

There is no part of the portrait photographer's apparatus which is more frequently misused or over-worked than the focusing screen. It is safe to say, indeed, that nineteen portraitists out of twenty ask this much abused accessory to do work for which it is quite unsuited. The inevitable result is that the quality of their work suffers and their business does not flourish as it should.

The focusing screen of a portrait camera is simply intended for focusing the image and placing it in its proper position and for helping to calculate the exposure by the amount of illumination which it shows. That is about as far as it can go towards the making of a portrait and, if it is relied upon to a greater extent, it is more likely to become a hindrance than a help.

The more skilful an operator becomes, the less he relies upon his focusing screen. He learns that the image it shows is deceptive. The finely graded emulsion of a portrait plate will pick up detail which is hardly visible on the comparatively coarse grain of the ground glass. What looks like a mass of impenetrable shadow on the focusing screen may become a pleasing, luminous, low-tone in his picture—provided the proper exposure has been given.

Many of the most skilful oper-



FROM AN ARTURA IRIS PRINT

*By Lauritz Bros.
Los Angeles, Cal.*



ators in portrait photography never worry how the picture looks on the focusing screen until they are ready to make the exposure. They have trained their eyes to look direct at their sitter from the level of the lens, to note every little play of light and shade, to measure the depth of a shadow, and to know when to heighten or subdue the highlights. They have learned to settle the composition and lighting of the picture before resorting to the camera at all.

One of the ablest photographers in the country admitted recently that he had not looked through a focusing screen twenty times in as many years. He leaves the focusing to his assistant while he concentrates his own attention upon the posing and the lighting of his sitter. When everything is ready, he gives a signal to his assistant, who brings the camera into position and focuses the image. As soon as this is done, another signal is exchanged, the plate holder is inserted by the assistant and the bulb is pressed by the photographer whose attention has not been diverted, even for a moment, from the artistic side of the task in hand. This method of working undoubtedly goes a long way to account for the sincerity and the spontaneity, the natural posing, the effective lighting, the pure tone rendering and all the other high technical and artistic quali-

ties which distinguish his portraiture.

Needless to say, this man is a photographer of much experience and that may explain in part, at least, his personal indifference to the focusing screen. The inexperienced operator, who is often more timid and bashful than his sitter, would be unable to proceed at all if he could not hide his head at frequent intervals under the convenient black cloth. It is certainly a trying experience for a youth who has just finished his apprenticeship to find himself face to face in the studio with a local celebrity in evening clothes or a great lady in an evening gown. And the operator whose lack of self-confidence first drives him to an excessive use of the focusing screen is only too apt to continue in the same bad practice all his life as a mere matter of habit.

There is another point of view to consider—the point of view of the sitter. Can you guess the feelings of a shy or sensitive sitter who patiently waits for the photographer to look on the focusing screen, shift the camera about, take another look, reef a curtain, look again, move the reflector, and so on for ten or fifteen minutes? Can't you imagine how disconcerting and irritating it must be to sit there with the muzzle of a lens levelled at you point-blank, at short range, and a man behind it with his head buried



FROM AN ARTURA IRIS PRINT

*By Lauritz Bros.
Los Angeles, Cal.*



under a black pall, issuing instructions about turning the head, raising the chin, closing the lips, and looking a little to the right or to the left?

It wouldn't be very pleasant, would it? If that is your method of working, can you wonder that there are still people who say that they would rather go to the dentist's than have their photograph taken?

Don't be a slave to your ground glass! Learn to pose your sitter, arrange your lighting, and make all your preparations before you bring your camera into play. You will get better negatives, better expression and—better orders!



SYSTEM

System is the ground-glass of business. It enables you to focus every little detail of your business with accurate sharpness. The successful business man is a success because he knows the cost of everything and sells at a certain profit. The successful photographer often owes his success to his ability as a workman and his personality. A good business man might capitalize the pho-

tographer's ability and personality, pay him a salary equal to the money he would make as his own master, and still make a good interest on his investment. This he would do by the certainty and economy which system makes possible.



A FALL HINT

With the coming of the cold weather the careful photographer will take steps to guard against trouble from cold solutions. The finger of the printer who senses temperature may not be as sensitive as he thinks it is and his work will suffer. The same thing will affect adversely the making of your negatives. The Fall season usually produces criticisms of plates, on the ground of insufficient speed, though these complaints are not well founded. It is not everyone who remembers to allow for the difference in the strength of daylight as we now get it, nor does every worker appreciate that the general temperature of the atmosphere is steadily getting lower, necessitating precautions against too low temperatures of solutions.



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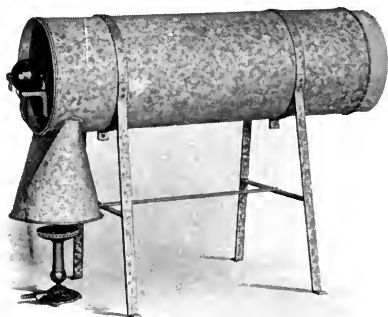
We make but one condition in our offer of cuts for the use of photographers.

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K 1—Light yellow for short exposures.

K 2—Slightly darker, for greater color correction.

K 3—For absolutely correct color rendering, used only with panchromatic plates.

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The Booklet, "Color Plates and Filters for Commercial Photography" free by mail on request.

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$\frac{3}{4}$ inch . . .	\$.20	\$.90	$1\frac{3}{4}$ inch . . .	\$.30	\$1.50
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*By Cornwell—Photographer
Dayton, Ohio*



STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

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RETOUCHING AND WORKING IN BACKGROUNDS WITH PORTRAIT FILM NEGATIVES

Perhaps the biggest bugbear, and the one which, to the average photographer, causes the most dread—especially during the Holiday Season, is retouching

Since the old printing out process has been superseded by the Artura method of printing, enabling the photographer to snap his fingers at the cloudy weather and finish his orders up to the very last hour before Christmas, the average studio could undertake nearly twice as many orders if only they could be assured they would not be handicapped by their inability to get their negatives retouched.

The object of this article is to offer a practical aid to the partial solution of this problem, not by advising against retouching, but to set forth in a few words the many advantages of Eastman Portrait Film in this connection.

Eastman Portrait Film negatives require less than one-half the work in retouching necessary with glass plates, as prints made from unretouched negatives of the same identical subject photographed on film and glass plates and carefully compared will quickly prove, even to the most prejudiced.

This is easily explained, because the Portrait Film gives a much more correct rendering of skin texture and flesh values than does the glass plate. The absence of halation gives each little highlight its true relative value, while the half tones and shadows are pure and clean and not marred or muddled by the spreading of the light caused by halation.

This being true, practically all that remains for the retoucher to do is to correct any little defects or to make some slight changes or improvements in form

or features. This enables the retoucher to accomplish fully twice as much work as with glass plate negatives.

When first undertaking to retouch Portrait Film negatives, some retouchers object to the resilience of the film. This can of course be quite easily overcome by placing the film negative flatly against the glass in the retouching desk, but with a little practice what at first seems to be an objection is found to be one of the greatest aids to speed and quality of work.

To use a commonplace illustration, it is like walking on rubber heels compared to the hard leather, or to riding on pneumatic tubes compared to the steel tire of the olden days.

This resilience causes the pencil to begin with a light stroke and end with a blended mark which does not require several more strokes to smooth it down. Retouching film negatives for a while and then returning to glass plates is a good deal like riding in a Pullman palace car on a smooth road bed and then suddenly changing to a lumber wagon on a country road.

Then, too, there is the wonderful advantage of being able to retouch on both sides of the negative. For instance, nearly all first class studios "proof retouch" their negatives. This proof retouching is usually quickly done, and then when the re-

toucher receives the negative to be finished the dope is found to have become hard and slick and does not take the pencil satisfactorily. This necessitates redoping, which causes a waste of all the time and work previously done.

Now by doing the proof retouching on the reverse side of the film, and the balance of the work on the image side, it is only a matter of a few finishing strokes to complete it.

Should it be necessary to do more work on a negative than can be made to adhere to the doped surface, the film can be turned over, doped, and what would otherwise be impossible becomes a very easy matter to accomplish, by finishing the retouching on the reverse side.

This also holds good in making copies of old pictures where deep scratches and blemishes must be removed.

There have been some objections to using Portrait Film because of the supposed difficulty of working in backgrounds.

We might say, however, that the day of worked in backgrounds is nearly passed. Like many other ideas it has been somewhat overworked and is being rapidly superseded by other methods of background treatment.

Unless the background is worked on a film negative with the air brush it is quite necessary



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By Cornwell—Photographer
Dayton, Ohio



to have the thickness of a glass between the design and the print, to give sufficient atmosphere or softness to the general effect; for, as is well known, if the background is sharper than the subject of the photograph it instantly becomes a foreground instead of a background and the figure or subject becomes a secondary consideration.

One of our most prominent photographers sends in this description of the method he uses for worked in backgrounds:

Flow with ground glass substitute a piece of clear glass; attach to Portrait Film negative at top with a piece of adhesive paper, and then work in design on the ground glass surface as usual.

After prints are made, carefully number the ground and file away for future use.

Number the film negative to correspond with the background, so that when duplicate orders are received there will be no confusion as to which ground was originally used.

The same ground can be used for any other negative of similar size and style.

In this way you will soon have a fine collection suitable for every style negative, and by varying the arrangement many different effects can be produced.

If desired, the backgrounds can be made on ground surface celluloid and are practically in-

destructible. These ground surface celluloid backgrounds may be reversed and made to correspond to the negative, no matter from which side the subject has been lighted.

Another very clever way of making backgrounds is to select designs suitable for your pictures, photograph same using Commercial or Process Film, diffusing the focus to render softness, and use the negatives thus obtained in the manner above described.

This is perhaps the most simple and effective method of handling the situation, and one within the reach of every photographer.



*You are conserving material
—making every result count
when you use*

Kodak
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By Cornwell—Photographer
Dayton, Ohio



BETTER RESULTS

The statement that any one photographic paper is the best paper made, is, to say the least, an exaggeration unless that paper is made in a number of grades that cover the whole range of contrasts met with in photographic subjects.

But it may be quite true that a paper, or grade of paper, is best for some special work. In fact there must be various grades of paper for various kinds of work.

In the days when Aristo Platino paper was used almost exclusively, excellent portrait work was made. We still hear of the excellent quality of negatives made for Aristo Platino, and some insist that they have never been surpassed.

Such a statement is too broad, but the fact remains that the quality was excellent. The negative had to be made to fit Platino paper. The secret of the quality those old negatives possessed was in their fitness.

To-day, if a negative doesn't fit one grade of paper it is printed on another. And if a certain quality of negatives is not suited to one make of paper the photographer is advised to change his negatives to suit.

This is all right if the change in quality is for the better, but it is all wrong if for the worse. Platino paper had a long scale

and required a long scale negative—nothing less would give a good result. The photographer worked for one thing—quality.

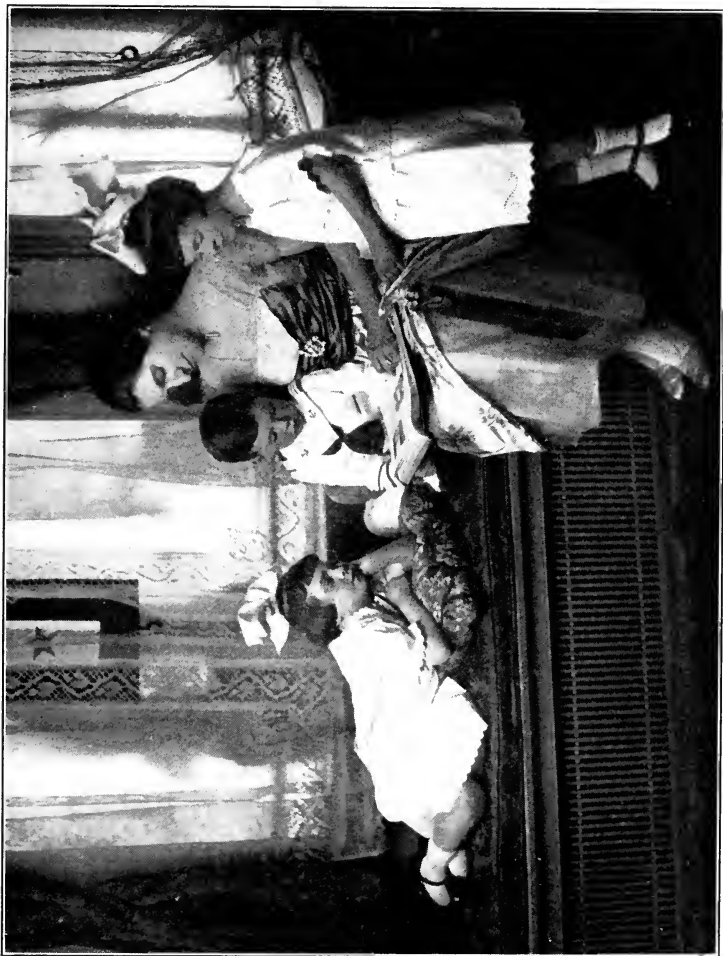
To-day, some photographers work for so-called effects. It isn't so much quality of lighting, quality of negative and quality of print, as effect, and a way to produce it. This is all very well for the artist who employs color, or the photographic pictorialist who wishes to produce misty mornings or landscapes in haze or smoke or fog. But a portrait should be something as nearly real as possible. We want to recognize our friends in their portraits.

Your subject placed in a good light, stands out from the background, looks round, has life, and your reproduction should be as true to life as is possible.

The longer the scale of your lighting, by which we mean the greater the number of tones from the highest light to the deepest shadow, the better will the idea of roundness be conveyed. The lighting, therefore, must be strong and brilliant.

Flat lightings, low toned effects, symphonies in grey may be artistic but they do not have the photographic quality that most people will pay a good price to procure.

Good negatives, full-timed but not over-timed, and under no circumstances under-timed, are necessary as a foundation. Once you have the right quality in



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*By Cornwell—Photographer
Dayton, Ohio*



your negative it is simply a matter of selecting the paper with a scale that will fit it. And for portraiture the longest possible scale is best.

Suppose you have made a brilliant lighting, a negative correctly exposed, which we will say has a scale of 1 to 60, another in which you have flattened the lighting and reduced the contrast to 1 to 30, and still another so flat that the scale is only 1 to 15. The most transparent shadows in the first negative will transmit 60 times as much light as the most opaque highlight, the second, 30 times as much, and the third, 15 times as much.

The first negative should be printed on a paper with a scale of 1 to 60. With such a paper the print will be perfect for the shadows will just have reached their deepest black when faint detail shows in the highlights.

With such a long scale paper the second negative would not print so well. If just sufficient exposure was given to get a tint in the highlights the shadows would not be black but would be grey, and if the exposure was sufficient to give the right black in the shadows, the highlights would be grey instead of white. This result would be even more pronounced in a print from the third negative. The negatives do not suit the paper.

But the rule works just the other way with a contrasty paper.

While the long scale paper will make the best possible print from the most perfect portrait negative, the contrasty, short scale paper will make the best print from a poor negative, but will only give a *poor* result from a good long scale negative.

A paper with a scale of 1 to 15 or 1 to 30 used on a negative with a scale of 1 to 60 will only reproduce 15 or 30 tones. The remainder will be lost in black shadows or chalky highlights or the center of the scale will be preserved and detail lost both in shadows and highlights.

Obviously the best portrait results can be secured only in one way. Select the paper with the longest scale of reproduction, Artura, and make negatives with a scale to suit the paper.

If you make a variety of negatives you must select a variety of papers to fit, and the best results can never be as good as if you had used an equal amount of judgment and made uniformly good negatives that would suit the best paper.

Prints with blocked shadows or highlights, or both, may be due to under or over-exposed negatives, but when this is not the case—when the negative is brilliant and full of detail—try a paper with a longer scale than you have been using. If your negative won't make a good print on Artura it isn't the fault of Artura but of your negative. It



A long scale negative printed on Artura. All the negative quality is preserved.



Print on short scale paper from same negative. Detail in highlights but shadows are blocked.



Print on short scale paper from same negative. Detail in shadows but highlights are blank.

must have a long graduation scale—suitable for the long scale of the paper.

Making long scale negatives for Artura and putting the most of quality into your prints is merely getting back to the principles of the Platino days. It isn't following the line of least resistance but it *is* following a line of obvious reasoning that will make dollars and a reputation.



SHOWING SAMPLES

In your reception room you have a line of sample prints, showing, at different prices, the range of styles and sizes you produce.

When a patron or prospective patron drops in to see what you are making, and you display this sample line to them, start at the top and come down. In other words, show them some of your best work first. They may not want to pay for that class of work, and if such is the case, they will probably hesitate before expressing themselves. Don't let them hesitate. As soon as you notice signs of hesitation, show them the next best style and watch for further symptoms, and proceed in this manner, downward through the line, until you notice that interest predominates their demeanor. When a customer appears to be interested, you have undoubtedly shown a

sample that meets with his approval and which he can secure at about the price he is prepared to pay.

As you talk with each customer and are descending the scale of price, comparing and discussing the different styles, don't speak disparagingly of the style that brings the lesser price. If the customer can't see the difference or cannot pay the difference in price for the better style, he must not be discouraged in his opinion of the style that can be purchased at the more modest sum.

Never form your own opinion as to the price a customer will pay for pictures, as you may underestimate and not only lose the sale of the higher price style, but at the same time the customer may resent being shown the cheaper kind. If price is a factor in the transaction, it is surely easier and safer to start at the top and come down—easier to sell a moderate price picture after talking high prices, than to sell a moderate price picture after talking low prices.

One more point that is vital. Have confidence in the merit of your photographs. Keep your sample line up to the highest standard of quality you can produce. Apologies for the condition or quality of any sample will destroy confidence in the patron, and every sample you show should be right, so that you can stand back of it.



ARTURA PRINT FROM EASTMAN PORTRAIT FILM NEGATIVE

*By Cornwell—Photographer
Dayton, Ohio*



FALSE FIXING BATH ECONOMY

A worn out fixing bath never was any good to a careful worker except for the silver waste he could get out of it, and he may not even find it worth while for this purpose if he buys potassium sulphide (liver of sulphur) to throw down the silver. Sodium sulphide is not so expensive and at the present price silver recovery is worth while to the man who finishes large quantities of prints.

Such an economy as the recovery of silver is much more reasonable and profitable than holding on to a fixing bath that has been used for more than one gross of 8 x 10 prints per gallon of bath.



*Remove the handicap to
better results—*

USE

**EASTMAN
PORTRAIT
FILM**



SELECTING A LENS TO FIT YOUR NEEDS

Do you work with your camera at least 8 or 10 feet from your subject? If not, are you getting distortion? You certainly are if you work much closer than this, whether you know it or not.

It's worth while to prove to yourself whether or not your results are the best, and it is a very simple thing to do. If you have to work close to your subject to get a good sized three-quarter or head and shoulder portrait, make a negative close up in the usual way. Then without changing the position of your sitter, draw your camera back to a distance of 8 or 10 feet and make another negative.

Of course your second negative gives you a much smaller image than the first, but that is to be expected. Make an enlargement from the second negative, being careful to get the image the exact size of that in your first negative. A comparison of the enlargement and the contact print from the first negative will show you just how much distortion you get by working too close to your subject. The enlargement will be the most pleasing picture.

A wrong impression often prevails as to the cause of this distortion. Some photographers seem to think that it is the fault of the lens—that it is a lens im-

perfection, but such is not the case. All lenses, regardless of their size or focal length, will give the same perspective from the same point of view.

The confusion arises from the fact that a short focus lens is necessary for making full length figures in the average small studio, say, 18 feet in length. If the same lens is used for making head and shoulder portraits, however, it is necessary to work so close to the subject that the results show bad perspective, or distortion, and the lens gets the blame.

It isn't the short focus lens that is at fault. A long focus lens at the same distance from your subject will give the same distortion. It is entirely the point of view. Obviously the remedy is to continue using as short a focus lens as is necessary for full figure work and use as long a focus lens as the length of your studio will permit you to use for head and shoulder work.

For example, in your 18-foot studio you must allow for space behind the sitter and for space occupied by the camera, which will be about 5 feet. This leaves 13 feet to work in. The longest focus lens which will permit you to make a full figure portrait of the correct size on a 5 x 7 plate is approximately $10\frac{1}{2}$ inches. You are working 13 feet from your subject and the perspective is very good.

To make a head and shoulder portrait of good size, say, a $2\frac{1}{2}$ -inch head on a 5 x 7 plate, your lens will be about 4 feet from your subject. This is entirely too close for the best results, but you must work this close if you have no other lens.

With a 20-inch lens you will get exactly the same size image at about 8 feet from your subject, which is twice the working distance. The perspective will be much better and the same lens may be used for heads as small as $1\frac{1}{2}$ inches.

If you find the perspective in your work is poor and you wish to correct it by employing a lens that will permit you to work at a greater distance from your subject, you may be at a loss as to what is the best lens for your special use.

There is a very simple rule which gives you results sufficiently accurate for practical use. Suppose you have a good lens for head and shoulder work but want a lens for full figures. The average standing figure is 68 inches. Suppose you wish to make standing figures about 7 inches on 8 x 10 prints. Divide 68 by 7 and the result is $9\frac{5}{7}$ or practically a 10 times reduction. Add 1 to the reduction figure, $10+1=11$, and divide the working length of your studio, whatever it may be, say, 15 feet or 180 inches by 11, and the result, 16.3, is the greatest focal length of lens you



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*By Cornwell—Photographer
Dayton, Ohio*





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Dayton, Ohio



can use. As round figures will answer for all practical purposes the fractions may be disregarded in these calculations.

The same rule applies to heads, taking 9 inches as the height of the average head. By this rule you can determine the reduction you wish to make, whether it be a head, a three-quarters or a full figure, and can quickly determine the focal length of the lens that will produce the result you wish at any given distance from lens to subject.

Suppose you wish to make a group and your studio has a width that allows you to make the group 10 feet, or 120 inches wide. You want the group to be 8 inches wide on your plate so the reduction is $120 \div 8 = 15$. The rule says add 1, which makes the reduction figure 16. Your working distance is 15 feet, or 180 inches, and $180 \div 16 = 11$, so your lens can not have a focal length of over 11 inches to make such a group.

To find the greatest width of group that your 16-inch lens will include, divide your working distance, 180 inches, by the focal length of your lens, 16 inches, and the result 11, is the reduction figure; $11 - 1 = 10$, the actual reduction. Then multiply the width of image on plate by the reduction and you have $8 \times 10 = 80$, so your 16-inch lens will only include a group 80 inches wide, working at 15 feet.

Practically any information you need regarding focal lengths and working distances can be figured by the formula given below.

D = working distance, lens to subject

R = reduction ratio

F = focal length of lens

S = height or width of object

G = height or width of ground glass image

Therefore, any one of the following five calculations may readily be made:

$$D \div (R + 1) = F$$

$$F \times (R + 1) = D$$

$$D \div F = (R + 1)$$

$$R \times G = S$$

$$S \div R = G$$



OUR ILLUSTRATIONS

Environment usually has quite a bit to do with the success or failure of any individual or business.

Dayton, Ohio, has the reputation of being a go-ahead city, a municipality in the habit of doing things in a big way. Cornwell—Photographer is located right in the middle of business Dayton, which may, in a measure, account for his success as a photographer. Cornwell—Photographer has a most attractive studio, where is handled the regular line of studio work; in addition he has from the first made a specialty of home portraiture and has achieved a more than local reputation.



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*By Cornwell—Photographer
Dayton, Ohio*



Cornwell—Photographer firmly believes that the same elements necessary to success in any other line are equally applicable to the conducting of a photographic studio and his entire establishment is conducted according to strictly modern business methods. Coupled with sound business judgment is a keen understanding and thorough appreciation of the artistic and with this knowledge goes the ability to produce results.

Newspaper and other advertising media are made use of, and Cornwell—Photographer keeps his business well before the public.

Eastman Portrait Film and Artura Iris are used exclusively, and Mr. Cornwell pays both products a high tribute as to excellence.

The examples of Mr. Cornwell's work, published in this issue, speak for themselves.



Artura Carbon Black Enlargements

*retain the contact quality and
there is a Carbon Black
surface to match the
contact print.*



GET THE HABIT

A little invention, well advertised, has made almost every man his own barber. And just as he has been convinced by advertising that he can shave, so is he being convinced, by advertising, that he can save.

The war and advertising are creating a habit of thrift that will hold firmly once it has taken root. We are all of us so earnest in our desire to win (as we surely will) that the wants of the nation need only to be advertised to be quickly filled.

The call of men has made it necessary for us to conserve the help of those left behind and to employ women. The call of money has led us to curtail extravagance and to cultivate thrift, to save as we have never saved before. The call of labor for necessary war work has brought many non-essential industries almost to a standstill. And even when labor is available the call on materials for war work has made the conservation of such materials absolutely essential.

We must, first of all, win the war, and when we know what is essential to that end, we do the obvious thing—throw our hearts and souls into the task.

The big essentials of conservation—money, food, fuel, etc., have been widely advertised. The results have been wonderful, al-



ARTURA PRINT FROM EASTMAN PORTRAIT FILM NEGATIVE

*By Cornwell—Photographer
Dayton, Ohio*



though in some cases, restrictions have been necessary.

The photographer has been fortunate. He may have been inconvenienced occasionally by not receiving shipments of goods promptly, but he must remember that transportation is essential to win the war. He should make one shipment take the place of three or four by anticipating his wants, but should order carefully.

There should be less waste of material, for the duration of the war, at least. There should be fewer spoiled prints and negatives, less chance exposures, greater care in the use of chemicals and a strict accounting of all silver waste. Every piece of glass that it is possible to salvage should be returned to the manufacturer for re-coating. Spoiled negatives should be washed free of chemicals, dried and carefully packed for safe shipment. If carelessly packed and broken in shipment, not only the glass but the transportation as well is a loss.

Everything that is manufactured for your use represents time, labor, material, money and transportation, and all of these are essential to the winning of the war.

Aside from the necessity for conservation, however, the saving that can be made by the photographer who practices thrift will be found decidedly worth

while. Waste is an expense. Reduce waste and you not only increase your profit and help win the war, but you go far in insuring yourself against a shortage of materials that would cripple your own business. The government is going to take, and rightfully, whatever is needed for winning the war. By avoiding waste we can have sufficient materials for both the government and business.



DANGER OF SULPHIDE FUMES

Plates and papers should never be stored within reach of the fumes of hydrogen sulphide which are given off from the sodium-sulphide re-developer. Where batches of bromide prints are toned almost every day, the cumulative effect of the fumes is enough to ruin a stock of sensitive material in a few weeks. Plates will develop with an iridescent stain, and will show general deterioration and fog. Bromide and gaslight papers will be affected in practically the same way and will produce dirty, flat prints of poor quality. Naturally, the first impulse of the professional is to suspect the keeping quality of his material. No manufacturer can make plates and papers proof against the action of hydrogen sulphide fumes.

When the mail reaches the trenches, the happiest soldier in France is the one with photographs from home.

*Have your portrait
made to-day.*



THE PYRO STUDIO

Line cut No. 257. Price, 50 cents.

THE ONLY CONDITION

We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first*. C. K. CO., LTD.

*Buy a good trimmer once—you
won't need another*



EASTMAN TRIMMERS

Are built for a lifetime. Made entirely of metal, can't warp, always cut true. The table is marked in half inch squares on black enameled surface, has a transparent trimming gauge and stationary brass rule. Furnished in three sizes.

THE PRICE

Eastman Trimmer No. 10, 10 inch	. . .	\$ 9.00
“ “ No. 15, 15 inch	. . .	12.00
“ “ No. 20, 20 inch	. . .	16.00

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.

WANTED

DISCARDED NEGATIVES

We purchase discarded negatives of standard sizes from $4\frac{3}{4} \times 6\frac{1}{2}$ to 20×24 , providing same are in good condition and are carefully packed in accordance with our instructions.

We will pay all the freight on shipments of 100 lbs. or more, except from localities where the freight rate exceeds \$1.00 per 100 lbs., in which case the shipper will be required to pay the excess.

Before making any shipment please secure these instructions, prices and further particulars, which will be furnished on application.

Canadian Kodak Co., Limited,

Toronto, Canada

Address shipments to West Toronto.

WRATTEN FILTERS

For use with Color Sensitive Plates.

Wratten K and Contrast Filters are the most perfect filters that can be produced for color correction. The K 1 and K 2 filters may be used with either orthochromatic or panchromatic plates. The K 3, G, A, B and F are for use only with panchromatic plates. With these filters and panchromatic plates colored objects may be photographed lighter, darker or exactly as they appear to the eye. A set of color filters is a necessity in any studio doing commercial work.

Orthochromatic Filters

K 1—Light yellow for short exposures.

K 2—Slightly darker, for greater color correction.

K 3—For absolutely correct color rendering, used only with panchromatic plates.

Contrast Filters

G—Strong yellow for showing grain in dark yellow woods, copying stained prints, etc.

A—Orange-red for photographing mahogany, rendering red objects light in tone, etc.

B—Green for rendering green objects light or blue-prints, typewriting, etc., black.

F—Deep red for photographing dark mahogany, etc.

The Booklet, "Color Plates and Filters for Commercial Photography" free by mail on request.

WRATTEN FILTER PRICES

	Gelatine Film	Circles or Squares in B Glass		Gelatine Film	Circles or Squares in B Glass
$\frac{3}{4}$ inch . . .	\$.20	\$.90	$1\frac{3}{4}$ inch . . .	\$.30	\$1.50
1 inch . . .	.20	1.00	2 inch . . .	.40	1.65
$1\frac{1}{4}$ inch . . .	.20	1.15	$2\frac{1}{8}$ inch . . .	.50	1.80
$1\frac{1}{2}$ inch . . .	.25	1.30	$2\frac{1}{2}$ inch . . .	.65	2.35
$1\frac{5}{8}$ inch . . .	.30	1.35	3 inch . . .	.90	

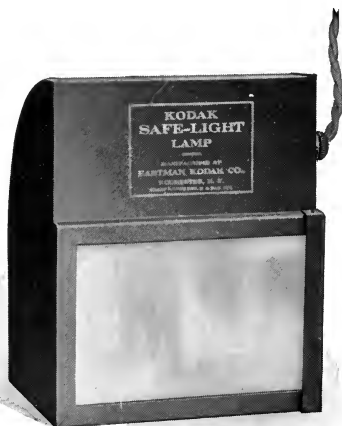
Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.

Make your dark-room safe.

The Kodak Safelight Lamp



An adaptation of the Wratten Safelight Lamps, equally efficient, but smaller in size. As with the Wratten Lamps, is constructed only for electricity and is furnished with electric socket, cord and plug, but without electric globe.

Series 2 Safelight furnished with lamp.

Kodak Safelight Lamp, complete as above . \$4.00

Extra Safelights, 5 x 7, any series, each . . .60

Canadian Kodak Co., Limited,

Toronto, Canada

All Dealers'.

*There could be no more appropriate
gift suggestion.*



EASTMAN PORTRAIT ALBUMS

Will keep the soldiers' portraits as they should be kept, and when the boys come home, there will be room for the picture record they will make of the war and its friendships.

Have albums in stock, show them, sell them and you will make more business for yourself. And besides, there is a good profit for you on album sales.

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.

*We make it—we
know it's right.*

TOZOL

*The Complete Developer for
Photographic Papers*

Contains no adulterants, requires no additional developing agent, is not a substitute. Tozol is prepared exactly as it was before the war. We recommend it for Artura, Azo and Velox papers—the price is reasonable.

THE PRICE

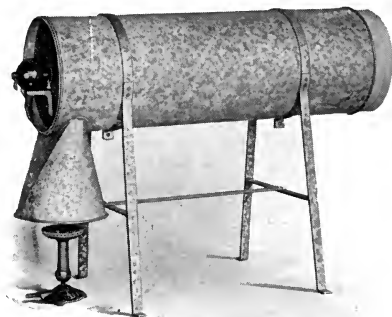
1 oz. bottle	\$ 1.10
$\frac{1}{4}$ lb. bottle	4.00
$\frac{1}{2}$ lb. bottle	7.75
1 lb. bottle	15.00

Canadian Kodak Co., Limited,
Toronto, Canada

All Dealers'.

Use an

IMPROVED MAJESTIC PRINT DRYER



Small initial cost—easy to operate—dependable and efficient—nothing to get out of order. A Majestic Print Dryer will enable you to turn out a big amount of work in a little time. The prints will dry thoroughly, properly shaped, in from fifteen to twenty minutes.

Improved Majestic Print Dryer No. 1, complete,
with 2 drying rolls, electric motor, fan,
gas heater and stand \$38.00
No. 5, complete, with 5 drying rolls 75.00

Canadian Kodak Co., Limited,

Toronto, Canada.

All Dealers'.



The Crown Printer

Thoroughly practical in operation and substantially constructed.

The hand operated pressure pad is brought into full pressure contact with the paper before the lights automatically switch on.

A sliding frame, located at the left side of the Printer, provides means for excellent diffusion of illumination. The 8 x 10 Crown Printer provides for one Ruby and four 100 Watt Mazda Type C Lamps. The 11 x 14 Crown Printer accommodates one Ruby and six 100 Watt Mazda Type C Lamps.

No. 1 Crown Printer, 8x10; No. 2, 11x14; height from floor, No. 1, 30 inches; No. 2, 30 inches; floor space occupied when shelves are folded, No. 1, 15½x17½ inches; No. 2, 20x22½ inches.

*For prices please enquire of your
regular stockhouse.*

Folmer & Schwing Department

Eastman Kodak Company

ROCHESTER, N. Y.

STYLE

DURBAN

For 4 x 6, 5 x 8
and 7 x 9½
Square Prints.

Slip-In Corner Style.
Colors - Grey
and Brown.



The Durban is an exceptionally attractive and high class folder made of two-tone coated Leatherette stock. This is the folder to use for your best grade work, and one that will bring the price for Xmas trade. Insert has neat tinted design with raised Corners with neat scroll Embossing on each. Colored bevelled edges. Tinted Embossed Crest on Cover with nipped edges. Be sure and have a stock of this style for your Best Xmas Trade.

SAMPLE MAILED FREE

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Canadian Card Co., Toronto, Canada.

PHOTOGRAPHIC MOUNTS

MADE IN CANADA

Add to the quality of your
enlargements and you will
add to your sales.

ARTURA CARBON BLACK

*Enlargements retain the
contact quality.*



CANADIAN KODAK CO.,
LIMITED,
TORONTO, CANADA.

All Dealers'.



EASTMAN PORTRAIT FILM NEGATIVE, ARTURA PRINT

By Jerome Chircosta
Cleveland, O.



STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

ESTABLISHED 1906

VOL. 10

DECEMBER 1918

No. 10

A WAR MEASURE

STUDIO LIGHT, by appearing in its new dress, gladly conforms to a war measure. Several months ago it was found advisable to conserve, for war purposes, certain materials used in the making of paper by discontinuing the manufacture of a class of papers of extra weight and quality. As STUDIO LIGHT paper came in this class, orders placed with the mills were immediately canceled and a paper selected which would conform in every way to the Government's plan of conservation.

We pride ourselves on the appearance of this little magazine and have printed it on a paper specially made for us. Now that our stock of this material has been exhausted, we are glad to publish STUDIO LIGHT in its present form until such time as the paper mills resume operations on a peace basis.



THE IDEAL NEGATIVE

The following article by H. B. Romane in November *American Photography* contains an unusual amount of good advice based on sound photographic principles. He is a professional photographer who has undoubtedly had a considerable amount of practical experience which makes what he has to say well worth reading and his advice worth heeding.

—Editor's Note.

"Much has been written on this topic both by professional and amateur photographers, yet have I never seen an article that fully covers the medium used and its manipulation to obtain an ideal negative. It is not my purpose to give technicalities but to give in simple terms with all possible conciseness my method of obtaining negatives which satisfy the general public as being as nearly ideal as is possible of attainment with ordinary methods and ordinary tools with which to work.

"Let it be understood first and last that I do not pose as an authority on the art of photography. I am simply stating facts which have been clearly demonstrated

to me through years of work and experience which the professional photographer meets who caters to all classes of people, reaches all classes of people, and finally learns to know all classes of people.

"The average public demands work which must be kept up to a certain standard. It is the exactness of procedure which enables him to give professional results with the minimum amount of labor and waste. It is this exactness which enables him to duplicate the tone and texture of any photographic print. He must use as a rule better material, better workmanship and possess more knowledge of his subject than the amateur.

"The ideal negative is one which will practically take the place of the orthochromatic or panchromatic plate, and yet one of which the cost will not be prohibitive for the average work.

"The ideal negative must be one which will represent correctly practically every range of contrast. It must give detail in those intense highlights which characterize the work of our best photographers, but which are oftentimes represented by blank white paper in the average print.

"In portraiture the highlights are so placed as to center interest on the face, for it is the character of the face which receives most of the artist's attention. If the attention wanders from the face the composition of the pic-

ture should be such that attention is brought back to that point, but a mere highlight, a blank white space, will not hold interest. There must be something of interest in the highlight area. The first purpose of the highlight is to attract attention, the second to indicate form.

"Form is ever shown by roundness, not flatness. To secure the effect of roundness the light must be properly directed. A round object can be made to appear flat by lighting it equally from all sides. Consequently we must light our subject from one side only. The contrasts from such a measure are great. If we use direct sunlight we have intense, dazzling highlights and deep heavy shadows. Our negative, to be ideal, must have ability to express this contrast. In order to do this it must have speed and latitude.

"Speed is an essential, as it takes time to dig into those heavy shadows, and the next in importance to our highlights are our shadows. These should be made a valuable asset as they are your means of rounding out that side of the face. Always work to secure that quality which is described as roundness and which can only be had by proper use of your shadows. There is only one way I know to secure roundness in shadows and that is by lightening them to the proper degree and by exposing to catch every



EASTMAN PORTRAIT FILM NEGATIVE, ARTURA PRINT

By Jerome Chircosta
Cleveland, O.



bit of detail in your deepest shadows.

"No sensitive material will produce the same range of contrast in under exposure as in a correct exposure. Your negative should correctly represent the values of lights and shadows of your subject. If your highest light is fifty times as bright as your deepest shadow your negative should show the same range of contrast.

"After the range of underexposure is passed there is a stretch of latitude in which contrast increases proportionately with the exposure. If two seconds are the shortest correct exposure, a certain contrast between the highlights and shadows is produced which correctly corresponds to the range of contrast used.

"If four, five, six or eight seconds exposure will increase the density of the negative proportionately in the shadows and in the highlights, the degree of contrast remaining exactly the same, then any exposure from two to eight seconds will be correct and will correctly represent the latitude of the material used.

"Then comes the period of overexposure in which the contrasts begin to flatten out. This is because a highlight can become just so opaque and no more. Increased exposure will gradually increase the densities of the half-tones and shadows until finally all contrast is lost and the negative becomes entirely opaque. It

will readily be seen by this that the more latitude a plate has the greater are your chances of securing a good negative.

"You have all noticed the 'flare' which seems to surround a window through which strong light is admitted when viewed from the interior of a room. If you haven't just take your camera, load it with a non-orthochromatic plate and try to photograph the little stream just outside, with that blue range of hills in the distance where land and sky seem to meet. If you didn't see the halo before you will surely see it in that plate.

"As I said before, highlights have form and texture; they should be made up of points of light with intervening shadows. But whenever a point of light strikes the emulsion of a glass plate, it not only goes through but is reflected back, and it has the thickness of the glass in which to spread. Because this halo is something you do not see it is none the less real. It is readily seen that this reflected light destroys those very small shadows which give detail and brilliancy in a highlight. This is partly overcome in some plates by 'backing' them with a substance which partially prevents this flare; these plates are then called 'non-halation.' This is a quality which is practically indispensable for serious work.

"Supposing that we take a red



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Irish setter, place it against a blue wall and photograph it with the ordinary non-ortho plate. The result will be a black dog against an almost pure white background. Suppose again that a golden haired little miss with bright blue eyes and ruddy cheeks, wants a large head made on a white background. Employing the same agents before mentioned, we have a raven-locked miss with eyes much too light to match the dark hair surrounding the dark little face. The only way we can save our reputation as a photographer is by quickly and immediately consigning plates and proofs to the flames before any eyes save our own have beheld our well-meant but misguided efforts. Saddened but enlightened by our experiences we take an orthochromatic plate and do it all over again, if we really are in earnest, for a negative which records color values is essential and indispensable in this case. In fact I should say in light of past experience it is essential in any case. (Now just you wait, Mr. Critic; I haven't contradicted myself, yet.) While it is true that the qualities I have mentioned are indispensable in the ideal negative, there are two more without which the art may lose half its interest for the ones who practice it. These two are 'ease and certainty of manipulation' without which our play becomes work; our recreation

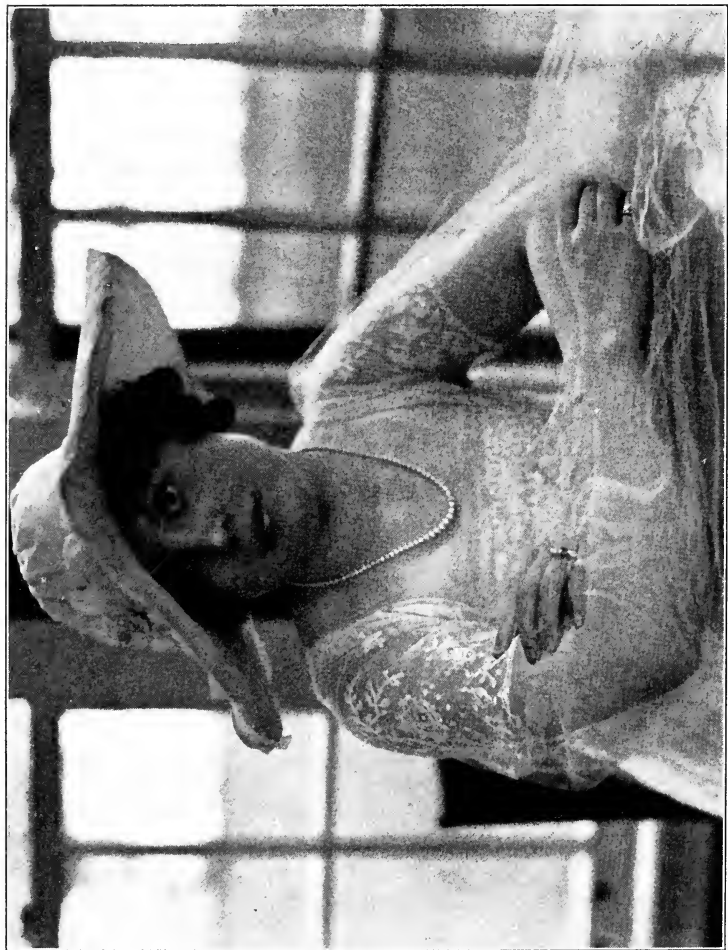
drudgery; and photography ceases to be a pleasure. To the careless dabbler this last point may not appeal; for him it is not written. But to the careful worker who takes pride in his ability and who wants to make good work better, what I now say may be profitable.

"As I said before the ideal negative must have speed, latitude and color-sensitiveness. It must be practically non-halation and must be able to express correctly practically every range of contrast. These essentials coupled with ease and certainty of manipulation are found in the Eastman Portrait Film.

"Now I want it understood that I have absolutely no interest in any of Eastman's products save that which anyone takes who uses (and likes) any of his goods and wants to pass a good thing on.

"These film negatives are made on the same material as roll films. They are made both for portrait and commercial use, and both are handled practically alike. They can be used in any plateholder for any size plate, simply by using a 'filmholder' which fits in your plateholder precisely as does your plate. The same applies to any curtain-slide holder used on portrait cameras, except that the 'filmholder' is slightly different.

"It is my purpose to explain the method of handling the Portrait Film so as to obtain the best possible negative from every ex-



EASTMAN PORTRAIT FILM NEGATIVE, ARTURA PRINT

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Cleveland, O.*



posure; in fact how to arrange your lighting, make your exposure and carry on your development to attain the ideal negative.

"Any room which is large enough to admit using a lens of six to ten inch focal length, which has one large, well lighted window is ample to make as good negatives as any professional knows how.

"Your subject should be dressed in medium or light clothes and seated about four to eight feet from the window, depending upon the strength of your light and the brilliancy desired in the negative.

"Your subject, if you intend to use the conventional lighting which is probably the easiest employed, should be seated with the left side to the light and should be placed carefully with the window slightly ahead.

"By all means use a bulb with a tube not less than five feet long. (You will see the reason for this later.) After seating your subject use a white piece of cloth about four feet square as a reflector to lighten the heavy shadow on the shadow side of the face. Now this shadow is the hardest part of your job. It must be lighted exactly, or else all the rest of your work is vain. Move your reflector about four to eight feet in front of your subject, keeping it directly in an even line with the face, not opposite as is generally done. Now carefully move this reflector toward

and from your subject until you can see absolutely all the detail in the skin on the shadow side of the face. When this is accomplished leave that side alone.

"Now take any dark piece of cloth about two by three feet, and holding it between the window and your subject at a distance of about two feet, bring it carefully forward from the back of the head to a point opposite the ear. Notice carefully the difference this makes in the shape of the face. If you have lightened your shadows correctly, this would make the face assume a roundness which no other means can secure. Holding the bulb in the hand, you request the subject to remain quiet and make your exposure. You will now see the reason for employing a tube of so great length. It is also handy many times when you wish to darken a highlight which is too pronounced, as you may shade the light with one hand and make the exposure with the other at the same time.

"Your exposure depends upon your stop used, the speed of your lens and the depth of your shadows. Don't be afraid of employing plenty of light, but give plenty of exposure for those heavy shadows. Remember, always the golden rule of photography. Expose for your (deepest) shadows, and develop for your (brightest) highlights.

"Now let us make another type



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Cleveland, O.*



of lighting, a 'line' lighting. This is made in exactly opposite manner to the other. Our subject is seated the same, except a little farther forward, as most of our light should come from a little behind. Moving the camera correspondingly, we place our subject so that we do not expose the negative to the direct light of the window, but rather to the darker shadow beyond it. Using our reflector more sparingly we use the most brilliant lighting we can obtain, even to direct sunlight. (This last is a test which even your orthochromatic plate cannot stand, but which seems to produce no ill effect on the Portrait Film.)

"Now take your dark cloth as before and subdue your highlight on the nearest shoulder to the window, request absolute quiet from your subject and open your shutter. Give about four to eight counts to this negative and risk movement at any time rather than underexposure. Now we are ready to develop our first attempts.

"There are developers galore on our market to-day, some good and some not so good. You may even have a 'pet' of your own of which you are very fond and which gives good results in ordinary work. But as a rule the photographer who follows the printed formula is the photographer who gets the best results.

"The development of Portrait

Films is comparatively easy either by tank or tray. For either tank or tray development pyro is strongly recommended, experience having taught that the best results are obtained with this agent.

"There is an unbreakable chain, forged of brilliant lights and deepest shadows, which connects the exposure and development of Portrait Films. You must expose for your shadows, and you just as certainly must develop for your highlights. Development must be closely watched, and as soon as your brightest highlight has arrived at the density of the shadow which your finger casts when held about three inches from the negative on the side from which your light comes, it should be quickly rinsed in water and transferred to a strongly acidified fixing bath. Care should be taken not to overdevelop your negative, as you will have plenty of contrast if your light has been brilliant enough to cause deep shadows.

"It is not necessary to develop your negative intensely to obtain detail in your shadows. That is what your reflector is for and it is for you merely to expose for this detail, then to develop for your highlights, letting your shadows take care of themselves. This is automatically done by tank development."





EASTMAN PORTRAIT FILM NEGATIVE, ARTURA PRINT

By Jerome Chircosta
Cleveland, O.



PORTRAIT FILM KITS

With the $4\frac{1}{4} \times 6\frac{1}{2}$ size Portrait Film Kit which has just been added to the sizes already furnished, films may now be used in all the standard sizes of plate holders up to and including 7 x 11.

By using these kits, Eastman Portrait and Commercial Films may be loaded into the regular view camera type of plate holders as readily as plates. The Portrait Film Kit is a narrow wooden frame, bound with metal at each end. The film lies in the holder and the kit fits against it, holding it firmly on all four sides. The metal ends of the kit fit under the end rabbets of the holder the same as a glass plate.

The use of these kits is a most satisfactory and convenient method of adapting plate holders to the use of film.

THE PRICE

$4\frac{1}{4} \times 6\frac{1}{2}$ Portrait Film Kits, each	\$.15
5 x 7 Portrait Film Kits, each	.15
$6\frac{1}{2} \times 8\frac{1}{2}$ Portrait Film Kits, each	.20
8 x 10 Portrait Film Kits, each	.20
7 x 11 Portrait Film Kits, each	.20

The prices above apply to U. S. only. Canadian users will please write their stock houses for prices.

NEW SIZE EASTMAN DEVELOPING BOXES

We are now supplying two new sizes of the Eastman Developing Box. The new 3A size will hold about thirteen pints of developer, which is about one-half the quantity used in the No. 3 Box. It will hold six 8 x 10 Film Developing Hangers or six 8 x 10 Core Plate Racks. As it requires a much smaller amount of developer than the larger size box its use is a decided advantage to the man who does not have a large number of films or plates to develop at one time.

The No. 4 Developing Box will hold eight 7 x 11 Film Developing Hangers or Core Plate Racks, or twelve 5 x 7 Developing Hangers or Plate Racks. The complete line follows:

EASTMAN DEVELOPING BOXES

No. 2—For six 5 x 7 Film Developing Hangers	\$4.00
No. 3—For twelve 5 x 7 or eight 8 x 10 Film Developing Hangers	6.00
No. 3A—For six 8 x 10 Film Developing Hangers	5.00
No. 4—For twelve 5 x 7 or eight 8 x 10 Film Developing Hangers	6.00



Every time you break a plate, every time you receive a broken plate, just remember

PORTRAIT FILM

HOW YOU MIGHT HELP No organization has ever had such united and continued support as has been given the American Red Cross. The work it has done, is doing and will do, is too well known to require more than passing comment.

Long before our boys crossed the seas it was administering to the suffering victims of war. Its work became larger and broader when millions of our boys went over to join in the conflict, and in the last couple of months most every community has had a demonstration of the wonderful efficiency of the Red Cross organization in fighting the epidemic that has swept this country.

Millions upon millions of dollars have been raised in various ways by this organization and expended with the greatest efficiency. Hundreds of thousands of individuals have given liberally of their time and effort in performing the tasks that were necessary to keep the great stores of supplies from being depleted, and there is need of continued support even though the war is practically ended.

There have been many unique and original plans of raising money for Red Cross work, but so far as we know, the most original plan conceived by a photographer is being carried out in our town, Rochester.

The warning that we issued for

the conservation of silver waste suggested to the proprietors of the Morrall-Hoole Studios that worn out fixing baths might better be made to work for the Red Cross than to go down the waste pipes.

It seemed a good idea if it could only be carried out, and most any *good* idea for helping the Red Cross *can* be carried out. An Eastman truck was enlisted to gather up the fixing baths and the Kodak Park Works to recover the silver.

With the success of this part of the plan assured, a meeting of the Rochester photographers was called and well attended. Practically every man was willing to donate his fixing baths, even though in some cases these baths were worth a considerable sum of money.

The only item of expense connected with the plan would be the containers, necessary for carrying away the solutions, but it was found that discarded milk cans could be bought at low prices and made to do good service.

We understand the plan is progressing nicely and that every grain of silver from the fixing baths donated will be turned into dollars and cents for the Rochester Red Cross.

But there have been other results than the salvaging of waste for a worthy cause. The Rochester photographers found it was good to get together, that they



EASTMAN PORTRAIT FILM NEGATIVE, ARTURA PRINT

*By Jerome Chircosta
Cleveland, O.*





EASTMAN PORTRAIT FILM NEGATIVE, ARTURA PRINT

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Cleveland, O.



could get together, and that they were of one mind. The other fellow down the street seemed to be a pretty good sort, the man around the corner was a mighty agreeable and courteous chap, and that commercial photographer proved to have quite a good business head as well as a fund of wit.

So they decided to get together again, and we understand have formed a local association, have planned cooperative advertising, contemplate opening club rooms and have a monthly get-together luncheon in mind.

This is not intended as a plea for the Red Cross, though the idea is a good one and the cause worthy. If you do not recover the silver from your waste fixing baths and you know the other photographers in your town are equally wasteful, possibly because none of you feel it is worth while, why not pool your waste and *make* it worth while?

By so doing you might incidentally find your neighbor photographer a better man than you thought him to be and you might find other means of cooperating for the betterment of photography and your own business. But if you only do it for the Red Cross you will have done something to be proud of.



*Make the negative on Eastman
Portrait Film.*

OUR ILLUSTRATIONS
"Artist Photographer" is sometimes a misnomer for, if the true application of these words is understood, one must be both a creator and a craftsman to deserve the title.

Jerome Chircosta is in truth an artist as well as a photographer. He loves color and dabbles in paint with as much pleasure and skill as he develops a photographic image.

Mr. Chircosta learned photography in his native Italy, studied art and practiced photography in Rome and Paris, and later on took charge of a large photographic studio in Buenos Aires. He came to the United States to establish a business for himself, locating in a suburb of Pittsburg, and later on ventured to open an establishment in the fashionable shopping section of down town Euclid Avenue, Cleveland, where he has conducted a very successful business for the last two years.

In the South American metropolis, as in Rome and Paris, high grade color work is much in demand, and this is a class of work which Mr. Chircosta is highly qualified to produce. His color portraits on porcelain and other mediums have all the charm of painting with the fidelity of photographs.

When a patron does not want a portrait in color, the photograph is done with the same care,



EASTMAN PORTRAIT FILM NEGATIVE, ARTURA PRINT

*By Jerome Chircosta
Cleveland, O.*



with the idea of reproducing as nearly as is possible the salient characteristics of the sitter which the artist senses and creates but which the camera merely records.

In Mr. Chircosta's opinion the highest development of photography must be credited to America. The work of American photographers, the patronage and appreciation of the American public and finally, the equipment and supplies of the American manufacturer represent the world's greatest advancement in photography.

Mr. Chircosta's studio is simply but artistically arranged, and he works by side windows supplemented by artificial light, no direct daylight whatever entering his posing room,

On being asked to state why he used film, he replied:

"I am using Eastman Portrait Film exclusively because of the delicate rendering of tone values.

"Because of my ability to work directly into strong lights, getting the minimum of halation.

"Because of their excellent speed and at the same time, great latitude in exposure, and last but not least, because of convenience in handling and storage."

Our illustrations are excellent examples of Mr. Chircosta's work on Portrait Film.



*Specify C. K. Co. Tested
Chemicals.*

TEMPERATURE

We merely want to warn you to warn your assistants, especially the new ones, of the great importance of correct temperature of solutions. Buy a thermometer or two and insist on their being used and explain why it is important.

All photographic chemical reactions slow up as their temperature is reduced and proceed more rapidly as their temperature is increased. If this were the sole result of changes in temperature, the danger would not be great. But there is a change in chemical action as well as in the speed of action, with changes in temperature, and this has led manufacturers to determine the temperature at which solutions will produce the best results and to recommend that these temperatures be kept constant.

The photographic chemist numerically measures the extent to which different chemical reactions are stimulated by a given rise in temperature and the result is known as the "temperature coefficient." The greater the effect of temperature on a chemical reaction the greater is its temperature coefficient.

This information is very important to the laboratory worker as the effect of temperature varies very much with different developing agents. For example, the effect of temperature on Elon is



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very small, while on Hydrochinon it is very great. A developer made up of Elon and Hydrochinon may have these two agents balanced to a nicety for use at a normal temperature (65°). Reduce the temperature and the Hydrochinon action will slow up, while the Elon action will be little affected, so the developer will behave as though it contained an excess of Elon. At high temperature the Hydrochinon is increased in its activity far more than the Elon and the result is reversed.

This explains why prints from the same negative, on the same paper, developed with the same developer may lack uniformity of contrast. Of course, the paper usually gets the blame, but it is rarely at fault. You may find your own printer using developer at temperatures varying as much as fifteen or eighteen degrees from time to time, and results are bound to vary.

Just here it might be well to state that an accelerator such as carbonate of soda, gives the developing agent its energy as well as prepares the gelatine for the developer to enter its pores, but an increase in carbonate will not make up for low temperature of the solution, will cause fog and will often cause a gelatine emulsion to frill or blister.

The effect of a low temperature developer on plates or film is that of under-development and

should be corrected by raising the temperature of the solution. The same applies to the developers for papers.

A similar principle applies to the fogging produced by developers. All developers will produce chemical fog if development is continued for a long enough time. But fog is produced much more quickly as the temperature of the developer is increased. Fog reaction is different to development reaction and has a temperature coefficient that is much higher. A developer which will develop a material to a good density with practically no trace of fog at normal temperature, may produce very bad fog if the temperature is raised ten degrees.

Aside from the troubles that may be encountered if developing temperatures are too high or too low, there are like dangers to be encountered in fixing. At too high temperatures there may be staining, softening, frilling or reticulation, and if the temperature is too low, fixing will be slow and there is the chance of insufficient fixation.

A radical difference between the temperature of the developer and the fixing bath will also cause trouble, so it is a wise precaution to personally see that solutions are kept at somewhere near normal temperatures and by so doing, avoid a great deal of unnecessary trouble.

When he comes
home—there should
be a new portrait to
record the event.

*Make the appointment
for him.*



THE PYRO STUDIO

Line cut No. 258. Price, 50 cents.

THE ONLY CONDITION

We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first*. C. K. CO., LTD.

*Buy a good trimmer once—you
won't need another*



EASTMAN TRIMMERS

Are built for a lifetime. Made entirely of metal, can't warp, always cut true. The table is marked in half inch squares on black enameled surface, has a transparent trimming gauge and stationary brass rule. Furnished in three sizes.

THE PRICE

Eastman Trimmer No. 10, 10 inch . . .	\$ 9.00
“ “ No. 15, 15 inch . . .	12.00
“ “ No. 20, 20 inch . . .	16.00

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.

WANTED

DISCARDED NEGATIVES

We purchase discarded negatives of standard sizes from $4\frac{3}{4} \times 6\frac{1}{2}$ to 20×24 , providing same are in good condition and are carefully packed in accordance with our instructions.

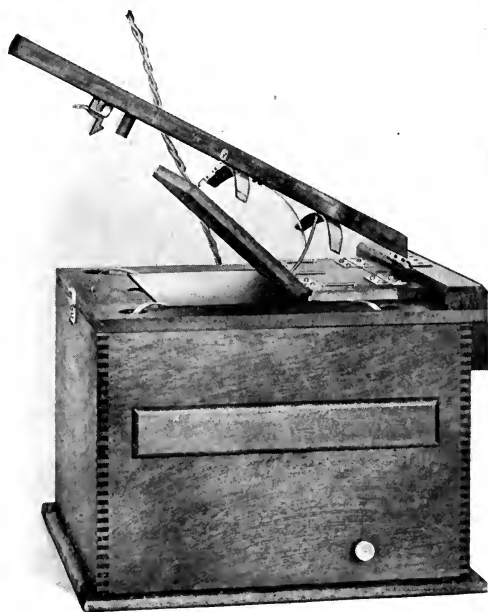
We will pay all the freight on shipments of 100 lbs. or more, except from localities where the freight rate exceeds \$1.00 per 100 lbs., in which case the shipper will be required to pay the excess.

Before making any shipment please secure these instructions, prices and further particulars, which will be furnished on application.

Canadian Kodak Co., Limited,
Toronto, Canada

Address shipments to West Toronto.

*Run two
printers
in the
rush
season—
get all
your
orders
out on
time.*



The No. 1 Eastman Printer

Takes all negatives up to 5 x 7, is thoroughly practical, convenient and economical.

Your output is limited to the number of prints you can make. Use this small printer for small work and double your output.

The printer burns two 60 Watt lamps, has automatic switch, lamp adjustments, red light and slide for ground glass. The printing opening is 8x8 inches; the box is strong and substantial.

The price with red lamp, electric cord and plug
to fit any ordinary electric socket, . . . \$10.00

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*Fog destroys negative quality.
Make your dark-room safe.*

KODAK SAFELIGHT LAMPS

afford an ample amount of that soft, indirect light that does not strain the eyes. The Safelights transmit only the light to which the plate is least sensitive but of this light there is as much as can be used with safety. The result is an efficient light that doesn't produce fog—a dark-room in which you can work with comfort.

Safelights are made for plates of varying degrees of sensitiveness and may be very quickly interchanged. The Series 2 Safelight is furnished with lamps unless otherwise specified.



Kodak Safelight Lamp	\$4.00
Series 1 Safelight, for all plates not color sensitive, 5 x 7 . . . . .	.60
Series 2 Safelight, for Orthochromatic Plates, 5 x 760
Series 3 Safelight, for Panchromatic Plates, 5 x 760

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Conserve to the utmost.
Use the chemicals that are
the most economical—that
make every result count.

Specify C. K. Co. Tested.



Look for this seal on the container.

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*There's no better developer
at any price.*

TOZOL

*The Complete Developer for
Photographic Papers*

Every grain of it produces developing energy. Contains no soda, starch or other adulterants. Tozol is prepared exactly as it was before the war. We make it—we know it's right—we recommend it for Artura, Azo, Velox and other developing papers.

THE PRICE

1 oz. bottle	\$ 1.10
$\frac{1}{4}$ lb. bottle	4.00
$\frac{1}{2}$ lb. bottle	7.75
1 lb. bottle	15.00

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When the boys come home.



EASTMAN PORTRAIT ALBUMS

Will keep the soldiers' portraits as they should be kept, and there will be room for the picture record they will make of the war and its friendships.

Have albums in stock, show them, sell them and you will make more business for yourself. And besides, there is a good profit for you on album sales.

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